

# ENVIRONMENTAL ASSESSMENT

## Expansion of U.S. Border Patrol Air Operations and Facilities, U.S. Border Patrol Tucson Sector, Arizona

U.S. Department of Justice  
Immigration and  
Naturalization Service



~~January~~ 2003  
APRIL



**FINDING OF NO SIGNIFICANT IMPACT**  
**Expansion of USBP Air Operations and Facilities,**  
**USBP Tucson Sector, Arizona**

**PURPOSE AND OBJECTIVE:** The purpose of the proposed action is for a U.S. Border Patrol (USBP) expanded air operation facility in the City of Sierra Vista, Arizona. The USBP needs this facility to fulfill its mission along the U.S./Mexico border. Six aircraft and 15 full-time USBP personnel are required to fulfill this mission.

The current USBP office and hangar space at the Libby Army Airfield (LAAF) is insufficient for the increased forward-area USBP operations. The expansion of existing facilities is needed for operational capabilities in this area. Finally, the existing facility at LAAF may no longer be available to the USBP if the U.S. Army expands its current aircraft hangar requirements.

**PROPOSED ACTION:** The USBP proposes to expand air operations originating out of the Joint Use LAAF/ Sierra Vista Municipal Airport (LAAF/SVMA) in Sierra Vista, Arizona. The USBP could lease or build new facilities at the airport. These additional facilities would include an aircraft hangar, office space, and enough parking spaces for 20 vehicles. Up to 15 full-time USBP personnel could be assigned to the expanded facility. Of these positions, 7 are already stationed at LAAF. A total of 16 aircraft could be stationed at the new facility. Of the 16 aircraft (15 rotary-wing and 1 fixed-wing), 6 aircraft (4 rotary-wing and 2 fixed-wing) are already based at LAAF. Consequently, there could be a 150% increase in USBP air operations at LAAF/SVMA.

As a part of the Border Patrol's ongoing Environmental Stewardship program, the proposed action includes the funding of local water conservation and water use reduction projects to offset anticipated increased water demand associated with proposed facilities expansion within the Sierra Vista sub watershed of the Upper San Pedro River Basin. This amount covers the operational costs of the increase in water usage only.

**ALTERNATIVES:** Four alternatives including the No Action Alternative were addressed in the Environmental Assessment.

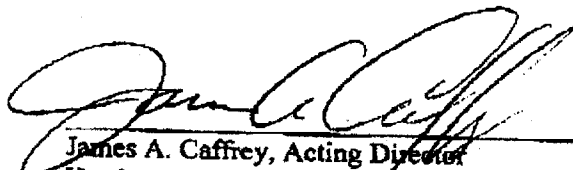
- The Preferred Alternative (Alternative One) would include the leasing of 6.77-acres on the civilian side of the airport from the city of Sierra Vista for the construction and operation of the proposed facilities.
- Under Alternative Two, the USBP would lease 10-acres on the military side of the airport from the U.S. Army for the construction and operation of the proposed facilities.
- Under Alternative Three, the USBP would continue to utilize existing space on the military side and lease additional existing facilities on the civilian side of the airport.
- Under the No Action Alternative (Alternative 4), the USBP would continue to utilize space on the military side of the airport and no new facilities would be constructed or leased as currently proposed in this assessment

**FINDING OF NO SIGNIFICANT IMPACT**  
**Expansion of USBP Air Operations and Facilities,**  
**USBP Tucson Sector, Arizona**

**ENVIRONMENTAL CONSEQUENCES:** No significant impacts to the natural or human environment are anticipated upon the implementation of the Preferred Alternative (Alternative One). USBP operations may affect but are not likely to adversely affect the Federally protected lesser long-nosed bat that may forage within 1-mile of the airport.

Only minor impacts to soils, biological resources, traffic and transportation, socioeconomic and economic development, or air quality are anticipated. As a result of water conservation and design measures incorporated within the proposed action, no significant impact to local or regional water supplies or regional conditions are anticipated and no impact to baseflow within the San Pedro River is expected. The Environmental Assessment concludes that no significant cumulative impacts would result and no environmental justice impacts or effects on the health and safety of children are anticipated.

**FINDING:** Based on the analysis contained in the Environmental Assessment and the environmental stewardship and design measures incorporated as part of the proposed action, implementation of the proposed action at LAAF/SVMA under Alternative One does not constitute a major Federal action significantly affecting the quality of the natural or human environment. Consequently, the proposed action does not require the preparation of an Environmental Impact Statement.

  
James A. Caffrey, Acting Director  
Headquarters, Facilities and Engineering Division

4/22/03  
Date

ENVIRONMENTAL ASSESSMENT  
EXPANSION OF U.S. BORDER PATROL AIR OPERATIONS AND FACILITIES,  
U.S. BORDER PATROL TUCSON SECTOR, ARIZONA

APRIL 2003

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## EXECUTIVE SUMMARY

This Environmental Assessment (EA) was prepared to analyze the potential for significant environmental impact associated with the proposed expansion of United States Border Patrol (USBP) air operations and facilities in Southeastern Arizona.

The USBP proposes to expand air operations originating out of Sierra Vista, Arizona. The only airport capable of supporting increased USBP air operations in the area is the Joint Use Libby Army Airfield/ Sierra Vista Municipal Airport (LAAF/SVMA). The USBP could lease or build new facilities at LAAF or SVMA. These additional facilities would include an aircraft hangar, office space, and enough parking spaces for 20 vehicles.

As many as 15 full-time USBP personnel could be assigned to the expanded facility. Of these 15 positions, 7 are already stationed at LAAF. New personnel may be hired from the local labor market, from another labor market, relocated from other USBP facilities, or any combination thereof. As many as 16 aircraft could be stationed at the new facility. Of these 16 aircraft (15 rotary-wing and 1 fixed-wing), 6 aircraft (4 rotary-wing and 2 fixed-wing) are already based at LAAF. As a result, there could be an estimated 150% increase in USBP air operations at LAAF/SVMA. Additional maintenance activities in the new hangar would be required to support the new aircraft. Proposed facility operations could occur on a 24 hour/day, 7 day/week basis.

Four alternatives were considered for this action. Under Alternative One, the USBP would lease 6.77 acres east of the future Taxiway "D" extension and northeast of Taxiway "K" from the city of Sierra Vista for the construction and operation of the proposed facilities. Under Alternative Two, the USBP would lease 10 acres west of the future Taxiway "D" extension and approximately 400 feet northeast of Taxiway "K" from the U.S. Army for the construction and operation of the proposed facilities. Under Alternative Three, the USBP would continue to utilize Aircraft Hangar No. 1 at LAAF and lease additional existing facilities at SVMA. These additional facilities would include an aircraft hangar, office space, and parking areas. Under Alternative Four (no action), the USBP would continue to utilize Aircraft Hangar No. 1 at LAAF. No new facilities would be constructed or leased and no increase in air operations at LAAF/SVMA would occur as currently proposed in this assessment.

Two additional alternatives were evaluated during the preliminary site selection process but dismissed for failing to be reasonable alternatives for project implementation. The construction of proposed facilities east of Hangar No. 1 at LAAF was discussed but dismissed because the proposed location would interfere with existing airport navigational aids. The expansion of air operations out of Yuma, Arizona was discussed but dismissed because it would fail to provide the USBP Tucson Sector with a forward position in the Sierra Vista area and would not provide the required operational capability for future agency actions in the region.

Under Alternative One, the proposed action is consistent with the designated land use identified for that parcel in the *Sierra Vista Municipal Airport Master Plan* and the city of Sierra Vista's proposal for the development of an airport industrial park on the adjacent 203 acres. The construction of a new USBP facility at this site would be consistent with the existing visual landscape at SVMA. Some excavation and ground clearing would occur as a result of facility construction but surface disturbance from excavation and construction will be limited to the extent possible and less than significant. A minor, temporary impact on wildlife is possible during construction activities, where noise and human activity may disturb a roaming or foraging animal. This impact will be negligible, of short duration, and would not result in a significant impact on wildlife in the ROI. Some vegetation disturbance and ground clearing in areas of previously disturbed nonnative grasslands may occur, however these areas are not critical to habitat requirements for native wildlife populations or any federally-listed species.

One federal status species (lesser long-nosed bat) is known to forage near the airport, one species (Canelo Hills ladies' tresses) is located approximately 1.5 miles to the north of the airport in Babocomari River, and one (Bald Eagle) has been reported transiting in the immediate vicinity of the airport. None of these species are known to occur at LAAF/SVMA. Alternative One may affect but is unlikely to adversely affect the lesser long-nosed bat while foraging on the Agave Management Area to the west of the airport during nighttime USBP arrivals and departures from the airport and would have no effect and no impact on the Canelo Hills ladies' tresses or Bald Eagle.

Areas within the nearby San Pedro Riparian NCA are designated by the USFWS as Critical Habitat for three federally-listed species: Huachuca water umbel (a plant), spikedace (a fish) and the loach minnow (a fish). Populations of the Huachuca water umbel are known to exist in the NCA. Neither of the fish are known or expected in the NCA; however the river is an important recovery habitat for both fish species. The southwestern willow flycatcher (a bird and also a federally-listed species) was recorded along the San Pedro River as recent as 1997.

Under Alternative One, the 6.2 acre-feet/year of anticipated consumptive water use would be entirely offset through water conservation projects. Therefore, Alternative One would not increase annual water consumption at Fort Huachuca or in the Sierra Vista sub watershed. No impacts to the San Pedro Riparian NCA and no effect on the Huachuca water umbel, southwestern willow flycatcher, spikedace, or loach minnow or designated critical habitat in the NCA would result because no additional consumptive water use would occur. Overall, the EA determines that Alternative One would have a less than significant adverse impact on biological resources but consultation with the U.S. Fish and Wildlife Service may be required prior to project implementation.

Since the area is within an attainment area for all criteria pollutants, the activities associated with Alternative One would not result in a violation of the General Conformity Rule. In addition, the total emission from these activities would clearly not exceed 50 ton/year pollutant-specific *de minimis* threshold values for all criteria pollutants and less than 10% of the total regional emissions budget for the air basin.

It is concluded that Alternative One would have no adverse effect on properties listed on, or determined eligible for, the National Register of Historic Places, and would not disturb or damage cultural resources and/or cultural resource sites. Correspondence with affected Native American tribes has occurred and a concurrence with this determination has been received from the Arizona State Historic Preservation Office (SHPO).

Alternative One includes an estimated 150% increase in annual USBP flight operations at LAAF/SVMA (an additional 4550 operations). Increased USBP flight operations within the vicinity of LAAF/SVMA would be consistent with ongoing airfield operation. The EA determines that the anticipated increase in air operations at LAAF/SVMA would not be significant. The increase in USBP Search and Rescue (SAR) capabilities along the border would produce a positive impact on health and human safety of undocumented aliens (UDAs) and other persons traveling in remote areas of the border region. Noise levels in the local and regional environment would increase during construction operations, but would be temporary, masked by ongoing air operations at the airport, and isolated from any sensitive land uses. Impacts to the regional and local transportation system resulting from the increase in vehicle traffic would be short-term and less than significant. Existing roadways have sufficient capacity to accommodate the increase traffic levels caused by the proposed action.

Given the small scale of the action relative to the size and complexity of the local economy, no significant socioeconomic impacts are anticipated. No appreciable change in local population distribution, employment, housing demand or expenditure patterns is anticipated as a result of this action. The EA also reports no impacts related to issues of environmental justice or the protection of children from environmental health and safety risks would occur.

The EA reports that no significant contribution to cumulative impacts would result. Alternative One would not contribute to cumulative impacts on water resources in the Sierra Vista sub watershed. Due to the large number of water use conservation, reduction and recharge projects underway and planned for the basin, future watershed conditions are expected to improve.

Under Alternative Two, potential impacts are similar to those described for Alternative One except for the following. Under Alternative Two, the facility would be located on U.S. Army property. The Fort Huachuca Installation Master Plan (FH 1995) identifies the 10-acre site as LAAF/Cantonment designated for aviation and aviation-related industrial use. The construction and operation of a USBP facility at this site would be in conflict with a planned clear zone for proposed runway 26R; however this conflict is anticipated to be less than significant at this time, because it is unknown whether or not runway 26R will actually be constructed. Prior to any ground disturbing activities at the site, a Class III pedestrian survey would need to be conducted under the direction of the Post Archaeologist. If any potential sites are discovered, consultation with the Arizona SHPO and all relevant Native American tribes would need to be conducted prior to the start of any ground disturbing activity.

Under Alternative Two, the 6.2 acre-feet/year of anticipated consumptive water use would be entirely offset through water conservation projects, implemented in accordance with USAIC&FH Policy 119, *Fort Huachuca Water Use Mitigation Policy* (USAIC&FH 2002). Therefore, Alternative Two would not increase annual water consumption at Fort Huachuca or in the Sierra Vista sub watershed. No impacts to the San Pedro Riparian NCA and no effect on the Huachuca water umbel, southwestern willow flycatcher, spikedace, or loach minnow or any designated critical habitat in the NCA would result because no additional consumptive water use would occur.

Alternative Two would not contribute to cumulative impacts on habitat and species populations along the San Pedro Riparian NCA or within the greater region. The loss of approximately 10 acres of undisturbed habitat would be not cumulatively significant because of the abundant availability of similar habitat surrounding the site and in the greater area.

Under Alternative three, potential impacts are similar to those described for Alternative One with the exception that no construction activities and therefore no construction-related impacts would occur.

Alternative Four would result in the continuation of existing USBP operations at LAAF/SVMA. Implementation of this No-Action Alternative would not affect ongoing or proposed USBP operations or activities outside of those proposed in this assessment.

It is the conclusion of this analysis that neither alternative would constitute a major federal action with significant impact on the human environment. Upon completion of consultation with the U.S. Fish and Wildlife Service, a Finding of No Significant Impact (FONSI) for Alternative One should be prepared to complete the NEPA documentation process and an Environmental Impact Statement (EIS) should not be prepared.

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# **1 PURPOSE AND NEED**

## **1.0 INTRODUCTION**

This Environmental Assessment (EA) was prepared to analyze the potential for significant environmental impact associated with the proposed expansion of United States Border Patrol (USBP) air operations and facilities in Southeastern Arizona.

The USBP is the mobile uniformed law enforcement arm of the Immigration and Naturalization Service (INS). Their primary mission is to detect and apprehend illegal entry across the borders of the United States. This is accomplished by maintaining surveillance, following up leads, responding to electronic sensor alarms and aircraft sightings, and interpreting and following tracks.

The USBP Tucson Sector encompasses all or parts of Cochise, Pima, Pinal, Maricopa, Yavapai, Navajo, Apache, Gila, Graham, Greenlee, Coconino, and Santa Cruz counties. The Tucson Sector is responsible for approximately 261 miles of the U.S. - Mexican border, most of which are remote and rugged lands.

USBP aircraft provide aerial vantage points from which the illegal entry of aliens can be detected. The Tucson Sector's six pilots currently stationed at Libby Army Airfield (LAAF) work directly with ground units to interdict alien smuggling operations, detect other illegal air or ground activities and report them to appropriate agencies, and engage in Search and Rescue (SAR) operations. The Tucson Sector uses both fixed-wing and rotary-wing aircraft to accomplish these operations.

## **1.1 SCOPE OF PROJECT**

The USBP proposes to expand operational capabilities in forward areas of its Tucson Sector. The City of Sierra Vista is designated as a forward area within the USBP Tucson Sector. The USBP has been given a Federal mandate to have its air operations be located in these forward areas. The proposed action includes both facility construction and leasing alternatives. Also included in the proposed action is an increase in the number of USBP air operations personnel stationed in the area and an increase in USBP air operations at Libby Army Airfield/ Sierra Vista Municipal Airport (LAAF/SVMA).

## **1.2 PURPOSE AND NEED FOR THE PROPOSED ACTION**

The purpose of this action is to provide an expanded air operation facility in the City of Sierra Vista required by the USBP to fulfill its mission along the U.S. - Mexican border. As many as 6 aircraft and 15 full-time USBP personnel are required to fulfill this mission. Current USBP office and hangar space at LAAF is insufficient to meet the

1 increased requirements of forward-area USBP operations. The expansion of existing  
2 facilities is needed to provide adequate operational capabilities for USBP activities in  
3 this forward area. In addition, the existing facility at LAAF may no longer be available to  
4 the USBP if the U.S. Army expands its current aircraft hangar requirements.

### 5 **1.3 PUBLIC INVOLVEMENT**

6 In keeping with established policy regarding an open decision-making process, this EA  
7 and resulting decision document of either a Finding of No Significant Impact (FONSI) or  
8 a Notice of Intent (NOI) to complete an Environmental Impact Statement (EIS) will be  
9 made available to agencies and the general public for review and comment. A  
10 Notification of Availability (NOA) will be published in applicable local newspapers and  
11 copies of the EA made available to the general public at local libraries or by request.

12 For further information on the proposed action or to request a copy of the EA, please  
13 contact: Mr. Charles McGregor, U.S. Army Corps of Engineers, ATTN: CESWF-PER-  
14 EE, P.O. Box 17300, Fort Worth, Texas, 76120-0300 or by email at:  
15 Charles.McGregor@swf02.usace.army.mil

### 16 **1.4 FRAMEWORK FOR ANALYSIS**

17 This EA is prepared in accordance with the following regulations and directives:

- 18 • National Environmental Policy Act (NEPA) of 1969
- 19 • Council for Environmental Quality (CEQ) Regulations (40 CFR 1500-1508)
- 20 • Immigration and Naturalization Service Procedure Relating to the Implementation  
21 of the National Environmental Policy Act (28 CFR Part 61, Appendix C)
- 22 • National Environmental Policy Act Documentation Quality Standards,  
23 Memorandum HQENG 10/9.26 of June 21, 2002, Office of Administration, U.S.  
24 Department of Justice, Immigration and Naturalization Service

25 This EA is intended to be a concise public document that provides sufficient evidence  
26 and analysis for determining whether to prepare an EIS or a FONSI. NEPA requires that  
27 agencies of the federal government implement an environmental impact analysis  
28 program in order to evaluate "...major federal actions significantly affecting the quality of  
29 the human environment." A federal action may include projects financed, assisted,  
30 conducted, regulated, or approved by a federal agency that have the potential to  
31 significantly affect the human environment. This EA was also prepared in order to meet  
32 the requirements of an effective and coordinated environmental planning process.

1 The following documents include extensive references to historical studies and existing  
2 conditions at LAAF/SVMA and surrounding regions as well as other USBP activities  
3 within the Tucson Sector. These documents are incorporated by reference into this EA:

- 4 • Coffman Associates, Inc. 2001. *Environmental Assessment for the Transfer and*  
5 *Development of 203 Acres of Property Adjacent to Sierra Vista Municipal Airport*  
6 *Sierra Vista, Arizona*. October. Phoenix, AZ: Coffman Associates, Inc.
- 7 • Coffman Associates, Inc. 2002. *Sierra Vista Municipal Airport, Airport Master*  
8 *Plan*. Phoenix, AZ: Coffman Associates, Inc
- 9 • Immigration and Naturalization Service, *Final Report, Environmental Assessment*  
10 *for Operation Skywatch, USBP Tucson Sector, Arizona*; May 2002.
- 11 • Immigration and Naturalization Service, *Draft Programmatic Environmental*  
12 *Impact Statement for U.S. Border Patrol Activities within the Border Areas of the*  
13 *Tucson and Yuma Sectors, Arizona*; October 2002.
- 14 • U.S. Army Garrison, Fort Huachuca, Arizona, *Programmatic Biological*  
15 *Assessment for Ongoing and Programmed Future Military Operations and*  
16 *Activities at Fort Huachuca, Arizona*; July 2002.
- 17 • City of Sierra Vista, Federal Aviation Administration and the U.S. Department of  
18 the Army, *Environmental Assessment for the Transfer and Development of 203*  
19 *Acres of Property Adjacent to Sierra Vista Municipal Airport, Sierra Vista,*  
20 *Arizona*; October 2001.
- 21 • U.S. Army Garrison, Fort Huachuca, Arizona; *Environmental Assessment for*  
22 *Autumn Air Shows at Libby Army Airfield, Fort Huachuca, Arizona*; October 1997.
- 23 • U.S. Army Garrison, Fort Huachuca, Arizona, *Final Environmental Impact*  
24 *Statement: Approval of Land Use and Real Estate Investment Strategies in*  
25 *Support of Real Property Master Planning, Fort Huachuca, Arizona*; November  
26 1999.
- 27 • U.S. Army Garrison, Fort Huachuca, Arizona, *Comprehensive Unmanned Aerial*  
28 *Vehicle Testing and Training at Fort Huachuca, Arizona*; June 2000.
- 29 • U.S. Department of Interior, Bureau of Reclamation, *Final Environmental*  
30 *Assessment for the Sierra Vista Water Reclamation Facility Effluent Recharge*  
31 *Project, Cochise County, Arizona*; November 1999.
- 32 • U.S. Department of Interior, U.S. Fish and Wildlife Service. *Biological Opinion:*  
33 *Fort Huachuca Ongoing and Programmed Future Military Operations and*  
34 *Activities*. Arizona Ecological Services Field Office, Phoenix; August 2002.

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## 2 DESCRIPTION OF PROPOSED ACTION

### 2.0 INTRODUCTION

This section provides a description of the proposed action in order to facilitate a thorough and comprehensive identification of a reasonable range of implementation alternatives.

### 2.1 PROPOSED ACTION

The USBP proposes to expand air operations originating out of Sierra Vista, Arizona (Figure 2.1). The only airport capable of supporting increased USBP air operations in the area is the Joint Use Libby Army Airfield/ Sierra Vista Municipal Airport (LAAF/SVMA). The USBP could lease or build new facilities at LAAF or SVMA. These additional facilities would include an aircraft hangar, office space, and enough parking spaces for 20 vehicles.

As many as 15 full-time USBP personnel could be assigned to the expanded facility. Of these 15 positions, 7 are already stationed at LAAF. New personnel may be hired from the local labor market, from another labor market, relocated from other USBP facilities, or any combination thereof. As many as 16 aircraft could be stationed at the new facility. Of these 16 aircraft (15 rotary-wing and 1 fixed-wing), 6 aircraft (4 rotary-wing and 2 fixed-wing) are already based at LAAF. As a result, there could be an estimated 150% increase in USBP air operations at LAAF/SVMA. Additional maintenance activities in the new hangar would be required to support the new aircraft. Proposed facility operations could occur on a 24 hour/day, 7 day/week basis.

As a part of the Border Patrol's ongoing environmental stewardship program, the proposed action includes the funding of local water conservation and water use reduction projects to offset anticipated increased water demand associated with proposed facilities expansion within the Sierra Vista sub watershed of the Upper San Pedro River Basin.

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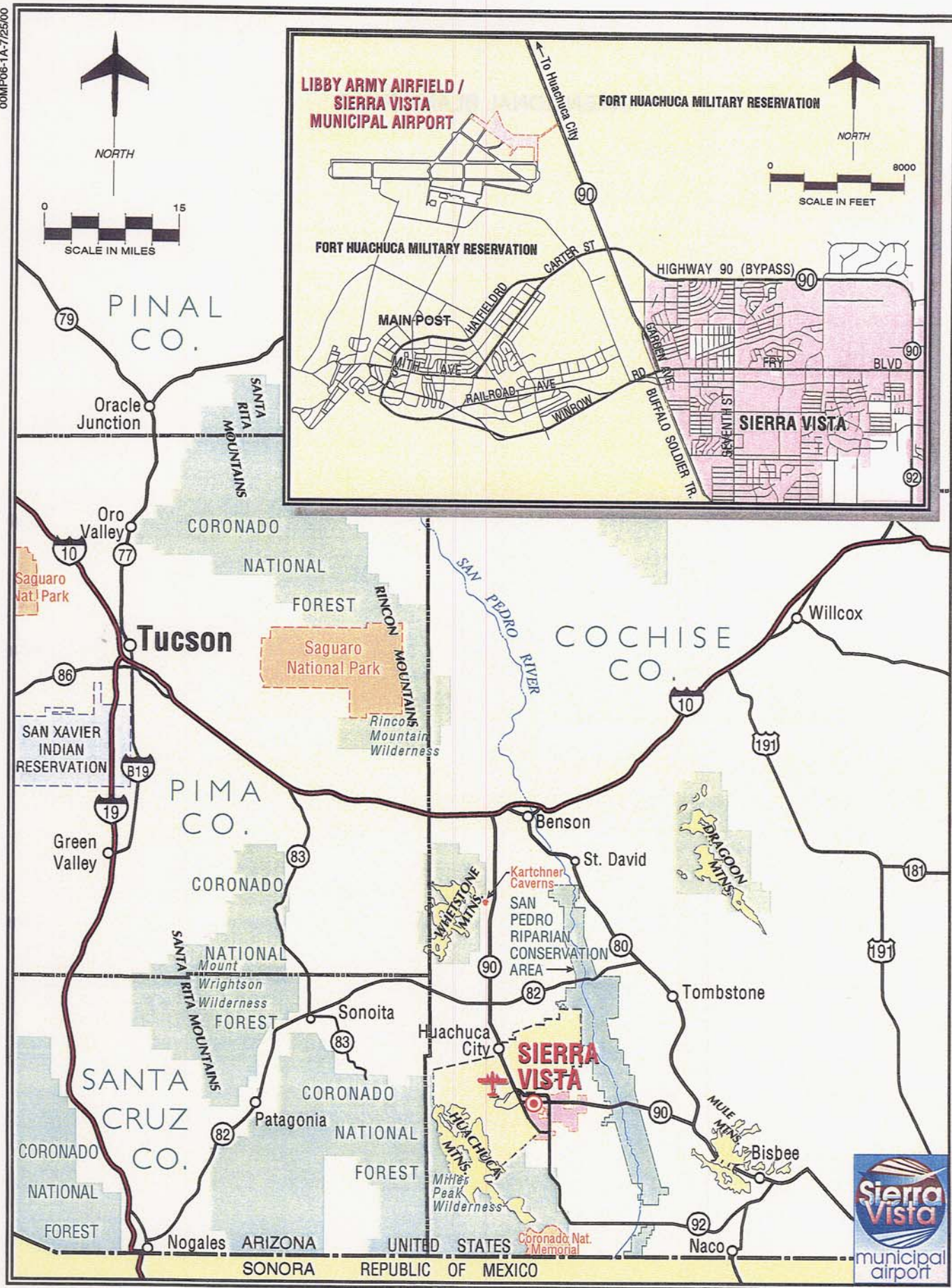


Figure 2.1  
Regional Setting

Source: Coffman Associates, Inc 2002

### 3 ALTERNATIVES CONSIDERED

#### 3.0 INTRODUCTION

This section provides a description of the alternatives considered in order to identify potentially affected environments and potential impacts to these environments that could result from the implementation of the proposed action. The focus of these alternatives is on the provision of facilities for an increase in air operations at LAAF/SVMA. Proposed increases in air operations at LAAF/SVMA are consistent under each action alternative and evaluated as such in each subsequent resource section.

#### 3.1 ALTERNATIVE ONE – NEW CONSTRUCTION ON 6.77 ACRES EAST OF THE TAXIWAY “D” EXTENSION

Under Alternative One, the USBP would lease 6.77 acres east of the future Taxiway “D” extension and northeast of Taxiway “K” (Figure 3.1) from the city of Sierra Vista for the construction and operation of the proposed facilities. All 6.77 acres of land could be disturbed during facility construction. This disturbance could include excavation, grading, paving or landscaping. Heavy construction equipment could operate for up to four weeks during the site preparation stage. Government construction personnel from the U.S. Army Corps of Engineers (USACE), National Guard, and other U.S. military as well as civilian construction personnel from Sierra Vista or surrounding region could be used during construction. Construction materials could be supplied by local or regional vendors. Air or ground operations at LAAF/SVMA could be affected by construction activities. This is the Preferred Alternative.

#### 3.2 ALTERNATIVE TWO – NEW CONSTRUCTION ON 10 ACRES WEST OF THE TAXIWAY “D” EXTENSION

Under Alternative Two, the USBP would lease 10 acres west of the future Taxiway “D” extension and approximately 400 feet northeast of Taxiway “K” (see Figure 3.1) from the U.S. Army for the construction and operation of the proposed facilities. All 10 acres of land could be disturbed during facility construction. This disturbance and construction activity would be similar to that listed under Alternative One.

#### 3.3 ALTERNATIVE THREE – CONTINUED LEASING OF LAAF AIRCRAFT HANGAR AND NEW LEASING OF EXISTING SVMA FACILITIES

Under Alternative Three, the USBP would continue to utilize Aircraft Hangar No. 1 at LAAF and lease additional existing facilities at SVMA. These additional facilities would include an aircraft hangar, office space, and parking areas.

### **3.4 ALTERNATIVE FOUR – THE NO ACTION ALTERNATIVE**

Under Alternative Four, the USBP would continue to utilize Aircraft Hangar No. 1 at LAAF. No new facilities would be constructed or leased as currently proposed in this assessment. No increase in air operations at LAAF/SVMA would occur as currently proposed in this assessment. Although the No-Action Alternative would fail to provide the required facilities and operational capacity for future USBP activities in the area, if implemented, it would not result in any reduction or restriction of other ongoing USBP activities independent of those proposed in this assessment.

### **3.5 ALTERNATIVES EVALUATED BUT DISMISSED FROM FURTHER CONSIDERATION**

Two additional alternatives were evaluated during the preliminary site selection process but dismissed for failing to be reasonable alternatives for project implementation:

- The construction of proposed facilities east of Hangar No. 1 at LAAF was discussed but dismissed because the proposed location would interfere with existing airport navigational aids.
- The expansion of air operations out of Yuma, Arizona was discussed but dismissed because it would fail to provide the USBP Tucson Sector with a forward position in southeast Arizona and would not provide the required operational capability for future agency actions in the region.

### **3.6 SUMMARY**

Four alternatives including the No Action Alternative will be carried forward for analysis. An alternative matrix (Table 3.1) presents each of the alternatives in comparison to the stated purpose and need of the proposed action. Table 3.2 presents a matrix of potential impacts resulting from the four alternatives carried forward for analysis and how they may affect environmental resources in the area.

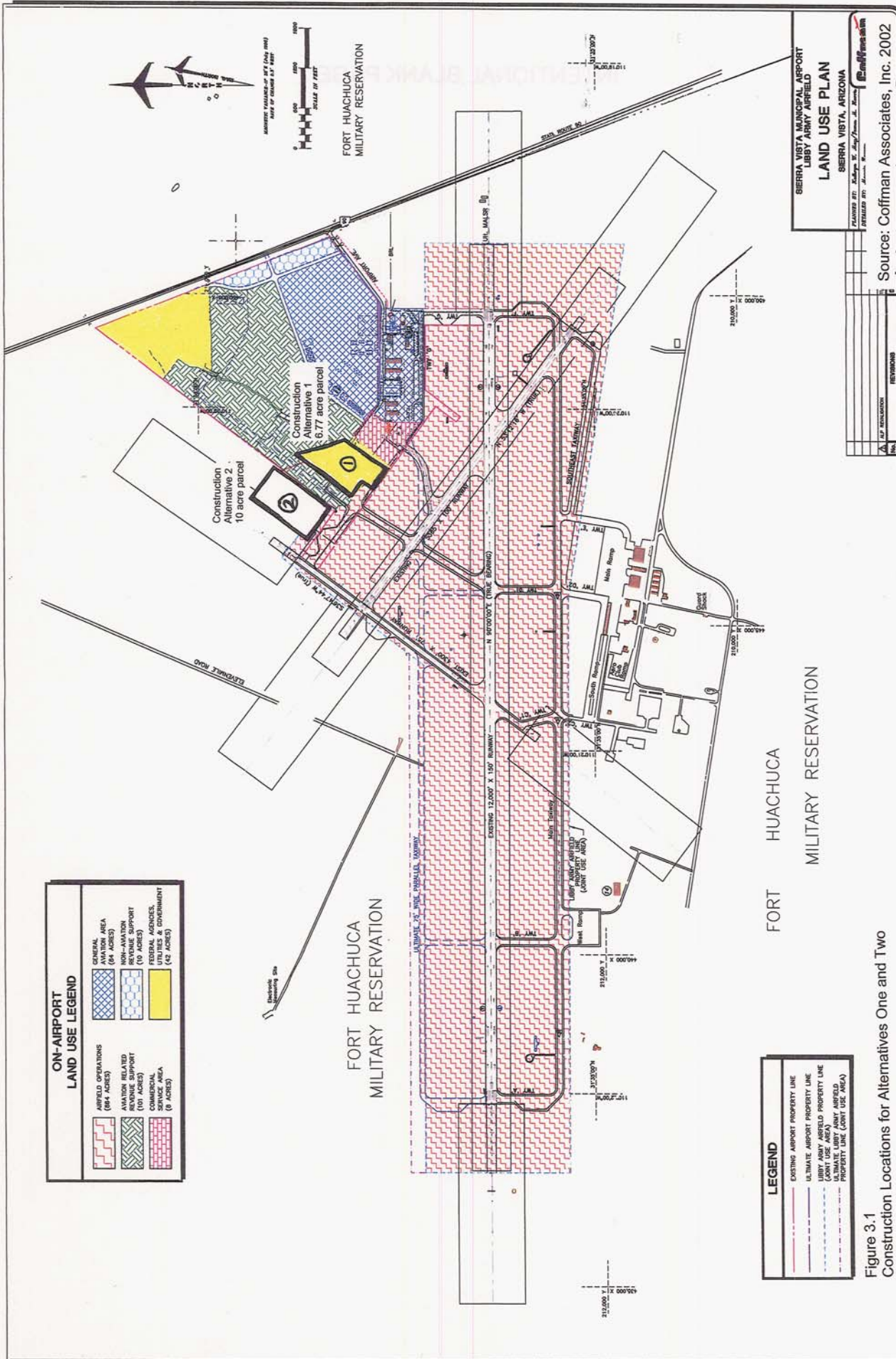


Figure 3.1  
Construction Locations for Alternatives One and Two

Table 3.1 Alternative Matrix

Requirements	Compliance with Alternatives			
	Alternative One: New construction on 6.77 acres east of Taxiway D	Alternative Two: New construction on 10 acres west of Taxiway D	Alternative Three: Cont. leasing at LAAF and leasing of facilities at SVMA	Alternative Four: No Action
Ability to support fixed-wing aircraft operations	Yes	Limited <sup>1</sup>	Yes	Limited
Ability to support rotary-wing aircraft operations	Yes	Limited <sup>1</sup>	No <sup>2</sup>	Limited
Ability to provide admin. space	Yes	Limited <sup>1</sup>	Limited	No
Ability to provide aircraft storage and maintenance	Yes	Limited <sup>1</sup>	Limited <sup>2</sup>	No

<sup>1</sup> USBP operations may be restricted at the 10-acre parcel because it occurs within an area designated as a future runway clear zone for fixed-wing aircraft operations on proposed runway 26R.

<sup>2</sup> Rotary-wing operations would be restricted at FBO facility and required to operate out of an existing helipad area to the east of the FBO building to avoid impact to general aviation assets and operations. While rotary-wing aircraft storage and maintenance may be permitted for a temporary period at the FBO facility, establishing rotary-wing operations out of the existing FBO hangar will not be acceptable or safe given the location of SVMA fueling operations across from the FBO hangar, mixing general aviation aircraft with helicopters, and mixing with Lifenet traffic. The current SVMA Master Plan shows Federal Agencies to be located on the north side of the airport away from general aviation activities.

**Table 3.2 Matrix of Potential Impacts**

	<b>Alternative One: New construction on 6.77 acres east of Taxiway D</b>	<b>Alternative Two: New construction on 10 acres west of Taxiway D</b>	<b>Alternative Three: Cont. leasing at LAAF and leasing of facilities at SVMA</b>	<b>Alternative Four: No Action</b>
<b>Land Use</b>	No direct impacts; indirect impacts during construction.	Potential direct impact to planned runway clear zone for 26R.	No direct impacts; indirect impacts on existing FBO operations and general aviation activity at SVMA.	No direct impacts; indirect impacts from existing congestion of LAAF Hangar.
<b>Visual Resources</b>	No impacts.	No impacts.	No impacts.	No impacts.
<b>Topography, soils and geology</b>	Direct impacts from grading and construction activity.	Direct impacts from grading and construction activity.	No impacts.	No impacts.
<b>Hydrology and Water Resources</b>	Direct impacts to unnamed wash east of site.	No Impacts	No Impacts	No impacts.
<b>Biological Resources</b>	Direct impacts to 6.77 acres of non- native vegetation; possible indirect impacts to local bat foraging habitat from increased aviation operations.	Direct impacts to 10 acres of native vegetation; possible indirect impacts to local bat foraging habitat from increased aviation operations.	No direct impacts; possible indirect impacts to local bat foraging habitat from increased aviation operations.	No impacts.
<b>Floodplains</b>	No impacts.	No impacts.	No impacts.	No impacts.
<b>Air Quality</b>	Direct impacts from increased air operations and construction activities.	Direct impacts from increased air operations and construction activities.	Direct impacts from construction activities.	No impacts.
<b>Noise</b>	Direct impacts from increased air operations and construction activities.	Direct impacts from increased air operations and construction activities.	Direct impacts from construction activities.	No impacts.

**Table 3.2 Matrix of Potential Impacts (cont.)**

<b>Cultural Resources</b>	No impacts.	Potential direct impacts to subsurface cultural resources.	No impacts.	No impacts.
<b>Infrastructure</b>	No direct impacts; indirect impacts from increased utility demands.	No direct impacts; indirect impacts from increased utility demands.	No impacts.	No impacts.
<b>Traffic and Transportation</b>	Direct impacts from increased air operations; indirect impacts from increased airport operations.	Direct impacts from increased air operations; indirect impacts from increased airport operations.	Direct impacts from increased air operations; indirect impacts from increased airport operations.	No impacts.
<b>Hazardous Materials</b>	No impacts.	No impacts.	No impacts.	No impacts.
<b>Socioeconomics</b>	No direct impacts; indirect impacts from increase in USBP personnel.	No direct impacts; indirect impacts from increase in USBP personnel.	No direct impacts; indirect impacts from increase in USBP personnel.	No impacts.
<b>Environmental Justice and Protection of Children</b>	No impacts.	No impacts.	No impacts.	No impacts.
<b>Health and Human Safety</b>	No direct impacts; positive indirect impacts from improved regional search and rescue capabilities.	No direct impacts; positive indirect impacts from improved regional search and rescue capabilities.	No direct impacts; positive indirect impacts from improved regional search and rescue capabilities.	No impacts.
<b>Cumulative Impact</b>	Loss of non-native vegetation, increase in USBP personnel and operations, increase in utility consumption.	Loss of native vegetation, increase in USBP personnel and operations, and increase in utility consumption.	Increase in USBP personnel and increase in airport operations, and increase in utility consumption.	No impacts.

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## 4 AFFECTED ENVIRONMENTS AND CONSEQUENCES

### 4.0 INTRODUCTION

This section describes conditions of, and possible impacts to, environmental resources potentially affected by the proposed action and alternatives. The descriptions of existing conditions provide a baseline understanding of the resources from which any environmental changes that may be brought about by the implementation of an alternative can be identified and evaluated. Following the existing conditions, potential changes or impacts to the resources are described as environmental consequences. As stated in CEQ Guidelines, 40 CFR 1508.14, the human environment potentially affected is interpreted comprehensively to include the natural and physical resources and the relationship of people with those resources. The term "environment" as used in this report encompasses all aspects of the physical, biological, social, and cultural surroundings.

In compliance with guidelines contained in NEPA and CEQ regulations, the description of the affected environment focuses only on those aspects potentially subject to impacts. Through an initial impact scoping process, it was determined that the following resources had the potential to be affected by the proposed action and alternatives analyzed in this EA:

- Regional Setting and Land Use (Section 4.1)
- Visual Resources (Section 4.2)
- Geology, Soils, and Topography (Section 4.3)
- Hydrology and Water Resources (Section 4.4)
- Biological Resources (Section 4.5)
- Floodplains (Section 4.6)
- Air Quality (Section 4.7)
- Noise (Section 4.8)
- Historic and Cultural Resources (Section 4.9)
- Infrastructure Available (Section 4.10)
- Traffic and Transportation (Section 4.11)
- Hazardous Waste, Substances and Materials (Section 4.12)
- Socioeconomics and Economic Development (Section 4.13)
- Environmental Justice and Protection of Children (Section 4.14)
- Health and Human Safety (Section 4.15)

Cumulative impacts defined in the CEQ regulations (40 CFR 1500-1508) as those impacts attributable to the proposed action combined with other past, present, or reasonably foreseeable future impacts regardless of the source are also evaluated (Section 4.18).

## **4.1 REGIONAL SETTING AND LAND USE**

### **4.1.1 EXISTING CONDITIONS**

This section addresses current land use conditions, plans, and policies affecting the proposed locations for USBP facilities. The Region of Influence (ROI) for land use encompasses the two parcels proposed for construction and the immediate surrounding area, including LAAF/SVMA.

LAAF/SVMA is located in the north-central portion of the Fort Huachuca Military Reservation (Figure 4.1). The airfield is a joint-use facility. The city-owned civilian facilities are located on approximately 72 acres of land on the north side of the airfield. The airport is located approximately 70 miles southeast of Tucson, 57 miles northeast of Nogales, 35 miles northwest of Bisbee, Arizona, and 15 miles from the U.S. - Mexican border. While the land on which the civilian facilities are located was deeded to Sierra Vista in 1982, the facilities are under the jurisdiction of the U.S. Department of the Army, and their use is governed by covenants and conditions. The lands surrounding Fort Huachuca are subject to Cochise County, Santa Cruz County, and city of Sierra Vista land use restrictions.

The Air Traffic Control (ATC) tower at LAAF/SVMA is located on the military or south side of the airfield. The tower is maintained and operated by the U.S. Army and is equipped to provide precision approach radar (PAR) service to pilots. The ATC tower currently operates from 7:00 a.m. to 4:00 p.m., Monday through Friday and occasionally operates on weekends to accommodate special military operations (Coffman Associates, Inc. 2002).

The facilities at SVMA include both airside and landside amenities (Figure 4.2). Airside facilities include, but are not limited to, runways, taxiways, connecting taxiways, airfield lighting, and navigation and visual aids. Landside facilities include terminal buildings, aircraft parking aprons, hangars, aviation-related businesses, and automobile access and parking (Coffman Associates, Inc. 2002).

#### **4.1.1.1 Airside Facilities**

SVMA has a non-exclusive easement to use the runways and taxiways at LAAF. Since the airside facilities are owned and controlled by LAAF, it is designed, built, and referenced in accordance with Department of Defense requirements. For example, where civilian runway protection zones at the end of runways are generally designed as trapezoids, they are rectangular per military regulations at SVMA (Coffman Associates, Inc. 2001).

The airport operates three runways: a primary runway (8-26) and two crosswind runways (12-30 and 3-21). Runway 8-26 is oriented east-west and is 12,000 feet long by 150 feet wide. It is constructed of concrete and has an effective runway gradient of 1.0 percent, sloping to the west. Runway 12-30 is oriented northwest-southeast and is 5,365 feet long and 100 feet wide. It is constructed of asphalt-concrete and has an

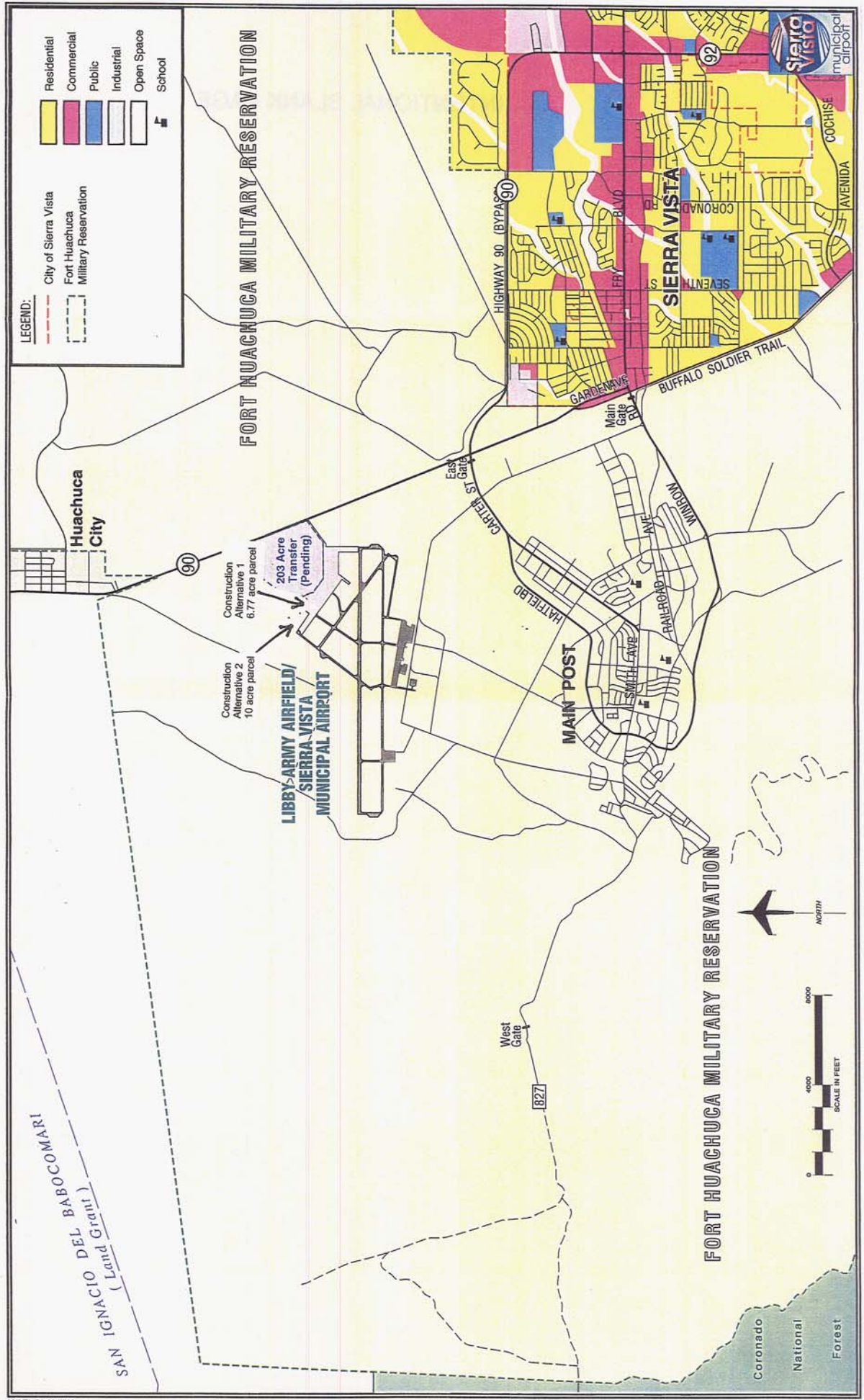
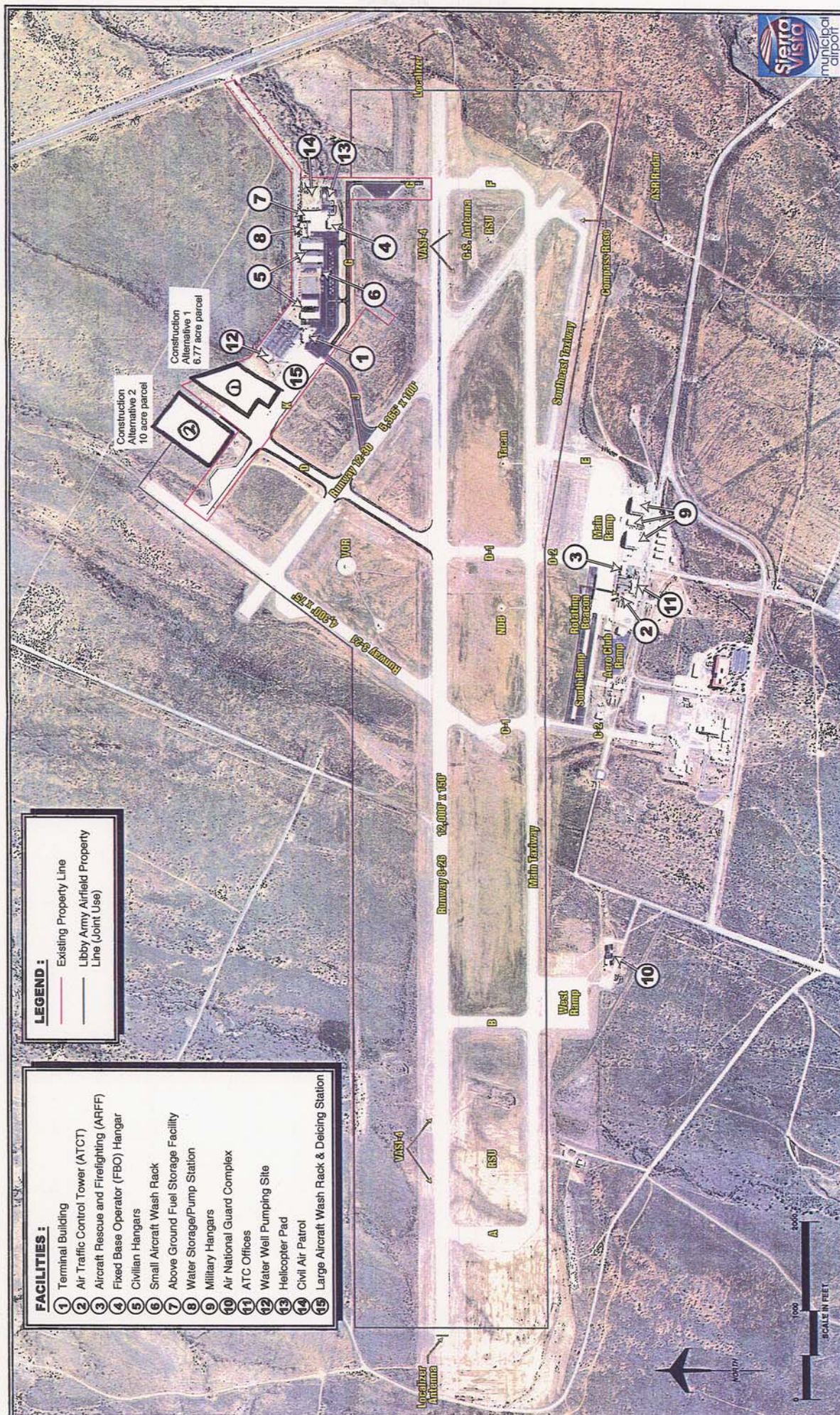


Figure 4.1  
LAAF/SVMA Location



Source: Coffman Associates, Inc. 2002

Figure 4.2  
LAAF/SVMA Facilities

effective runway gradient of less than one percent, sloping upward to the southeast. Runway 3-21 is oriented northeast-southwest and is 4,300 feet long by 75 feet wide. This runway operates with a 1,289-foot displaced threshold, reducing its available runway length to 3,011 feet for landing. This displacement locates the threshold north of Runway 8-26. It is also constructed of asphalt-concrete and has an effective runway gradient of 2.1 percent, sloping upward to the southwest (Coffman Associates, Inc. 2002).

Taxiway/taxi lane systems facilitate aircraft movement between the runway system and the landside facilities. Some of the taxiways are used exclusively by military aircraft, some are used exclusively by civilian aircraft, and some service both. The taxiways at SVMA vary in width from 50 to 75 feet (Coffman Associates, Inc. 2002).

#### **4.1.1.2 Landside Facilities**

Landside facilities primarily consist of those facilities required to accommodate aircraft, pilots and passengers while they are at the airport and typically consist of terminal buildings, ground services, aircraft parking apron, hangars, and automobile parking.

The terminal building at SVMA is located on the west side of the area deeded to the city for aviation purposes and is approximately 6,983 square feet. This facility consists of airline counters, baggage handling area, security room, waiting areas, vending machines, and restroom facilities (Coffman Associates, Inc. 2002).

The fixed base operator (FBO), Double Eagle Aviation, is located east of the terminal building near Taxiway G in a 5,022 square feet city-provided hangar building. The FBO provides fueling services, major mechanical repair, parts, aircraft rental, flight instruction, charter and cargo services, and a pilot's lounge (Coffman Associates, Inc. 2002).

SVMA has three civilian aircraft parking aprons, one south of the terminal building, one between the terminal building and the FBO hangar, and one around the FBO hangar. The apron south of the terminal building is reserved for large, commercial aircraft and can accommodate up to three planes with space for de-icing. The apron between the terminal and FBO contains approximately 45 tiedown spaces while the FBO apron can accommodate seven transient aircraft. In addition, there is a heliport area located on the east side of the FBO facility (Coffman Associates, Inc. 2002).

Hangars at SVMA are located near the FBO building. There are 32 single hangars and 9 double hangars. Three modular units are located east of the FBO hangar. These modular units are used by the Civil Air Patrol (Coffman Associates, Inc. 2002).

There are three parking lots at SVMA. One parking lot is adjacent to the terminal building, one near the hangars and local tiedowns, and one near the FBO building. The terminal building parking lot contains 249 parking spaces. The 18 hangar parking spaces are within a security gate provide parking for aircraft owners/pilots. The FBO parking area is located outside the fenced area and contains approximately 6 unmarked spaces (Coffman Associates, Inc. 2002).

Two parcels of land at SVMA are considered in this assessment. The 6.77-acre parcel on SVMA is vacant of any structures. It contains fill dirt from a previous taxiway expansion project. The 10-acre parcel on LAAF is also vacant with no structures. It has characteristics of undisturbed rangeland. There are no recreation areas, parks, conservation areas, prime farmlands, timberlands or other such features within the ROI.

#### **4.1.1.3 Existing Air Operations**

The USBP currently conducts aerial reconnaissance and SAR operations along the U.S. - Mexican border. Rotary-wing aircraft typically fly at altitudes of 200 feet above ground level (AGL) or lower. These altitudes are mandated by the Federal Aviation Administration (FAA) for flights within the airspace of the Barry M. Goldwater Range (BMGR), which includes portions of the Cabeza Prieta National Wildlife Refuge (NWR) (INS 2002). Typical reconnaissance missions over areas not restricted by the FAA are flown at 2,000 to 4,000 feet AGL, but pilots can drop to 200 feet AGL to accurately evaluate undocumented alien (UDA) conditions to determine if rescue operations are necessary (INS 2002). Fixed-wing aircraft normally fly along the border corridor during daylight hours only and typically at higher altitudes, except within the airspace of the BMGR and other airspace controlled by the FAA (INS 2002).

Once aircraft identify UDAs, information regarding their locations and apparent conditions are transmitted to ground patrol units. If a fatality appears to be imminent without immediate rescue efforts, helicopter Border Patrol Search, Trauma and Rescue (BORSTAR) units may be deployed. Similarly, if the UDAs are spotted in locations that are too remote or rugged for ground vehicles, helicopters may be used to rescue the UDAs. Environmental impacts associated with these activities in the Tucson Sector have been previously evaluated (see INS 2002).

#### **4.1.1.4 San Pedro Riparian National Conservation Area**

The San Pedro Riparian National Conservation Area (NCA), established by Act of Congress in 1988, is the dominant geographic feature in the San Pedro Basin, and is intensively managed for a variety of wildlife, environmental, and recreational uses. Managed by the Bureau of Land Management (BLM), the San Pedro Riparian NCA has as its purpose to protect the riparian area and the aquatic, wildlife, archaeological, paleontological, scientific, cultural, educational, and recreational resources within the authorized boundary of the area. It extends in a publicly owned corridor from the community of Curtis to the north, to a few miles below Hereford, situated immediately north of the Mexican border. The San Pedro Riparian NCA is adjacent to portions of the northeastern boundary of the installation and approximately 10 miles (16 km) separate the boundaries of the two federal reserves to the south. The San Pedro Riparian NCA is approximately 5 miles (8 km) wide at its widest point and encompasses both sides of the San Pedro River.

#### 4.1.2 CONSEQUENCES

The potential for impact to local and regional land use was evaluated based on the compatibility of land uses associated with the proposed action and alternatives with on-site or adjacent land uses and zoning, and consistency with general plans and other applicable land use plans and regulations. A determination of significant impact on land use could result if any of the following conditions are anticipated to occur:

- The action is incompatible with on-site or surrounding land use.
- Activities are inconsistent or in conflict with the applicable environmental goals, objectives, or guidelines of a city or county general plan, or other applicable federal or state agency land use plan for the area affected.
- The action would permanently alter the use of the land in a way that is incompatible with surrounding land uses.

##### 4.1.2.1 Alternative One – New Construction on 6.77 Acres East of the Taxiway “D” Extension

The proposed action is consistent with the designated land use identified for that parcel in the *Sierra Vista Municipal Airport Master Plan* (Coffman Associates, Inc. 2002) and the city of Sierra Vista’s proposal for the development of an airport industrial park on the adjacent 203 acres (see Coffman Associates, Inc. 2002). There are no known conflicts between the proposed action and the objectives of Federal, State, regional or local land use plans, policies or controls for the site. Construction activities would not impact the use of lands adjacent to the site nor cause a significant restriction in future land uses adjacent to the site. Overall, no significant impact on land use is anticipated.

##### 4.1.2.2 Alternative Two – New Construction on 10 Acres West of the Taxiway “D” Extension

Potential impacts are similar to those described for Alternative One except that the facility would be located on U.S. Army property. The *Fort Huachuca Installation Master Plan* (FH 1995) identifies the 10-acre site as LAAF/Cantonment designated for aviation and aviation-related industrial use. The U.S. Army and the city of Sierra Vista have designated approximately half of the site as a parallel runway clear zone for future LAAF/SVMA runway 26R. The construction and operation of a USBP facility at this site would be in conflict with this planned LAAF/SVMA clear zone, however this conflict is anticipated to be less than significant at this time, because it is unknown whether or not runway 26R will actually be constructed. No significant impact on land use is anticipated under Alternative Two.

##### 4.1.2.3 Alternative Three – Continued Leasing of LAAF Aircraft Hangar and New Leasing of Existing SVMA Facilities

No change in local or regional land uses would occur. Existing aircraft hangars on LAAF and SVMA are designated for air operations. However, rotary-wing operations would be incompatible with ongoing general aviation activities at the SVMA FBO hangar and

1 would be required to occur east of the FBO hangar in an area currently used for rotary-  
2 wing operations.

3 Because USBP operations would be divided into two separate locations (LAAF and  
4 SVMA) divided by an active runway and SVMA operations further divided between the  
5 FBO hangar and helipad operations area east of the FBO hangar, logistical difficulties  
6 and impacts to ongoing airport operations such as general aviation and aircraft refueling  
7 operations may arise. These difficulties may reduce the operational efficiency of the  
8 USBP facility and be in conflict with ongoing airport operations but would not create a  
9 significant impact on local or regional land uses. No significant impact on land use is  
10 anticipated under Alternative Three.

#### 11 **4.1.2.4 Alternative Four – The No Action Alternative**

12 No change in land uses would occur. No impact on land use is anticipated.

### 13 **4.2 VISUAL RESOURCES**

#### 14 **4.2.1 EXISTING CONDITIONS**

15 An assessment of visual resources includes a general description of the landscape  
16 setting and characteristics found at LAAF/SVMA. The ROI for visual resources includes  
17 the existing visual setting in and around LAAF/SVMA as it is defined by onsite and  
18 offsite features and various views from particular vantage points (i.e., viewsheds) that  
19 encompass those features.

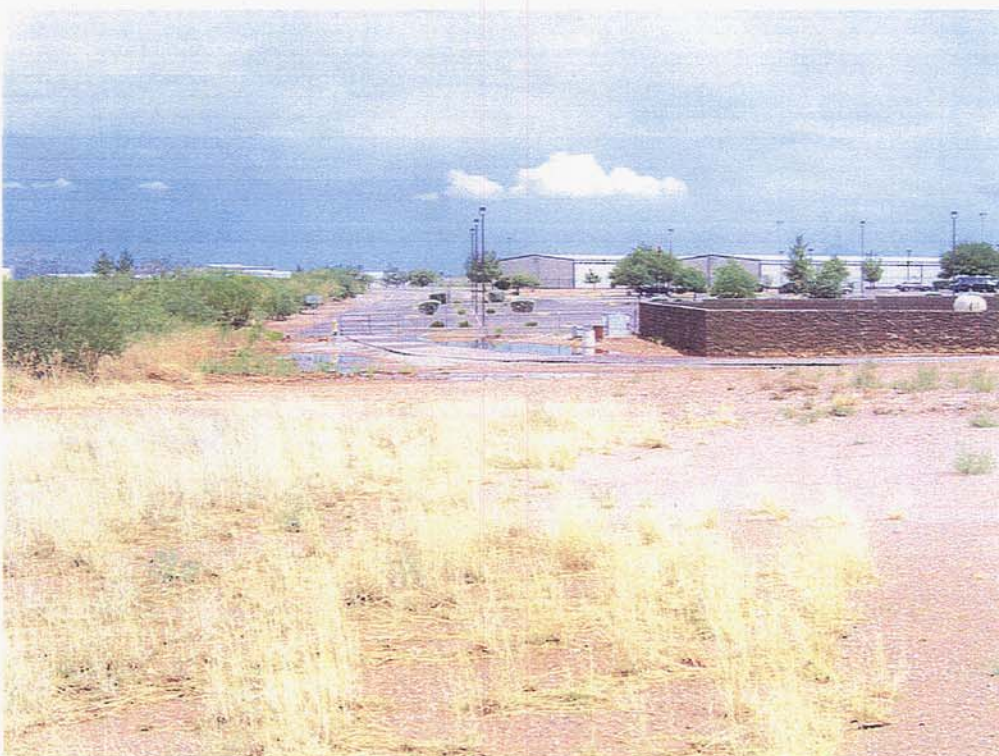
20 The local visual landscape can be characterized as a predominately rural setting with  
21 developed airport facilities that include a passenger terminal, aircraft hangars, taxiways,  
22 runways and other paved areas and small structures. By far, the most dominant  
23 features are the passenger terminal building, aircraft hangars, operations tower at  
24 LAAF, and large expanses of taxiways and runways.

25 Views to the north of the 10-acre and 6.77-acre parcels include native vegetation in the  
26 foreground followed by undeveloped areas and views of the Whetstone Mountains in  
27 the background (Figure 4.3). The northern boundary of the 6.77-acre site adjoins the  
28 203-acre parcel being transferred from the U.S. Army to the city of Sierra Vista for light  
29 industrial development. Once this transfer occurs and the site is developed, future views  
30 to the north would include light industrial and commercial businesses.

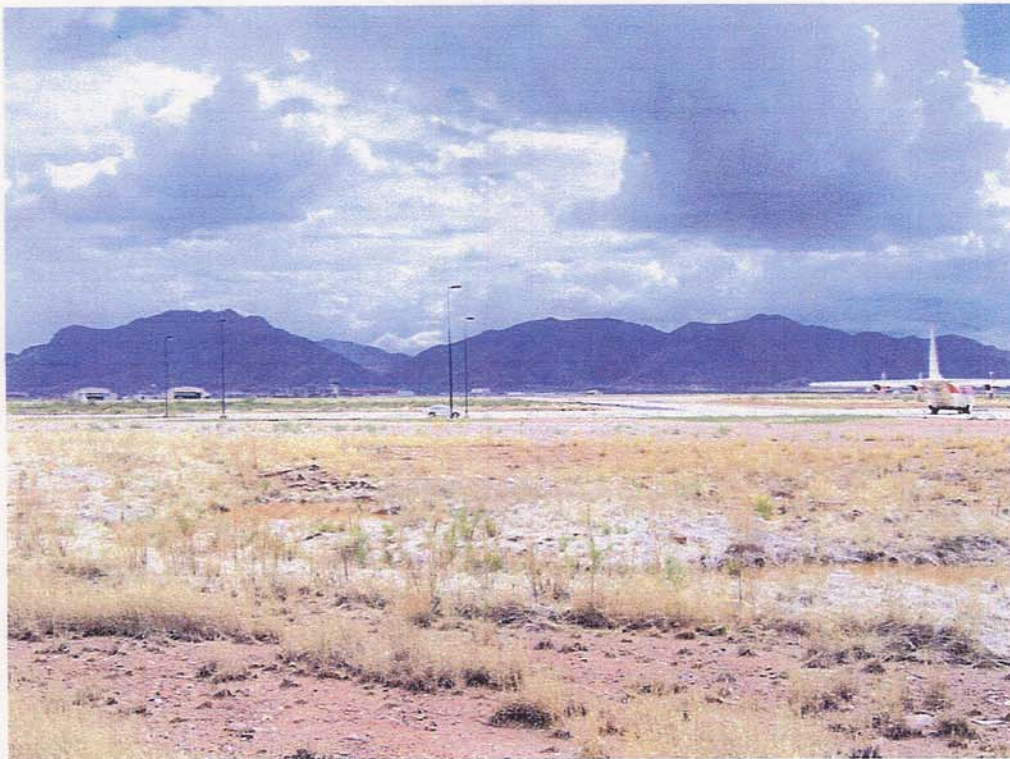
31 Views to the east of both parcels include utility poles, parking areas, and the passenger  
32 terminal, followed by the larger SVMA complex and associated structures (Figure 4.4).  
33 Views to the south of both parcels include the airport control tower, hangars #1 and #2,  
34 and other structures at LAAF in the foreground, followed by views of the Huachuca  
35 Mountains in the distant background (Figure 4.5). Views to the west are of the open  
36 mesquite-grass savannah habitat (Figure 4.6).



**Figure 4.3 Photograph showing view from 6.77 acre parcel looking north**



**Figure 4.4 Photograph showing view from 6.77 acre parcel looking east**



**Figure 4.5 Photograph showing view from 6.77 acre parcel looking south**



**Figure 4.6 Photograph showing view from 6.77 acre parcel looking west**

Both parcels are predominately obstructed from public view due to the remote location of LAAF/SVMA and the distance (approximately 1.5 miles) from Highway 90. Development of either parcel would be most visible from the SVMA passenger terminal and LAAF facilities.

#### **4.2.2 CONSEQUENCES**

The potential for impact to visual resources in the region was evaluated based on the potential for the proposed action to cause change in the local or regional landscape. A determination of significant impact on visual resources could result if any of the following conditions are anticipated to occur:

- A long-term change to the character of the ROI as a result of the proposed action.
- Installation of bright, uncomfortable, or visually disturbing lighting that would be seen from nearby public or residential areas, roadways, or adjacent locations.
- A substantial degradation of an existing viewshed or alteration of the character of a viewshed by the introduction of anomalous structures or elements.

The construction of a new USBP facility at this site would be consistent with the existing visual landscape at LAAF/SVMA. No long-term change to the character of the area would occur as a result of the proposed action. No bright, uncomfortable, or visually disturbing lighting would be introduced that could be seen from nearby public or residential areas or roadways. The visual appearance of the new facility would be consistent with city of Sierra Vista design guidelines and would not substantially degrade the viewshed or alter the character of the viewshed by the introduction of anomalous structures or elements. None of the alternatives are anticipated to impact visual resources of the ROI.

### **4.3 TOPOGRAPHY, SOILS, AND GEOLOGY**

#### **4.3.1 EXISTING CONDITIONS**

This section discusses the topography, soils, and geology of the site. The ROI for these resources is defined by the area within which an action may indirectly or directly cause changes in the character of the resource. This includes direct changes due to proposed earth disturbing activities as well as potential down-stream activities that may result from increased "up-stream" erosion, sedimentation or change in topographic condition.

LAAF/SVMA is situated at approximately 4,600 feet above mean sea level (MSL), and areas within the two parcels considered for construction and the airport in general are relatively flat and northward sloping. The Huachuca Mountains are located to the west-southwest of LAAF/SVMA. Other mountain ranges located nearby are the Whetstone Mountains to the northwest, the Dragoon Mountains to the northeast, and the Mule

Mountains to the southeast. The San Pedro River borders Sierra Vista on the east and the Babocomari River is northeast of the airport.

Soils on northward sloping terrain in the area consist of alluvium that was deposited during the Pleistocene. This soil consists of a brown sandy loam derived from granitic, limestone, and volcanic rock. This type of soil is known to be prone to erosion and gully formation with the removal of its protective vegetative cover. These sandy and gravelly loams are deep, corrosive soils characterized by rapid runoff and moderate to severe erosion. In addition to the naturally occurring soil complexes, the 6.77-acre parcel contains fill dirt from a previous taxiway expansion project and in the late 1980's the area was raked to a depth of 36 inches to remove all unexploded ordnance (Coffman Associates, Inc. 2001).

Prime farmland is defined as land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops. It must also be available for these uses. There is no prime farmland found at LAAF/SVMA or adjacent areas.

Several hundred feet of consolidated and unconsolidated sedimentary deposits, most of which are capable of transmitting groundwater, generally underlie the Upper San Pedro Basin (USPB). These deposits may be more than 1,000 feet thick in the south, where basin and range type faulting has produced a deep graben structure (BLM 1989).

Most of the western boundary deposits follow the crest of the Huachuca Mountains, which vary in elevation from about 5,000 to 8,400 feet above MSL. This mountain range is composed of intensely folded and faulted terrain in which marine limestone has been thrust beneath a granitic continental margin at the end of the Paleozoic Era, approximately 245 million years ago (USGS 2002). A series of these thrust faults creates a zone of weakness that forms a broad arc starting on the westernmost flank of the Mule Mountains, south into Mexico, north up the spine of the Huachuca Mountains, and finally to the northwest to where it dissects the Santa Rita Mountains (Arizona 1980). The principal regional hydrostratigraphic features are the upper and lower units of unconsolidated basin fill and overlying floodplain alluvium. These units form the regional and local aquifers.

#### **4.3.2 CONSEQUENCES**

Topographic impacts relate to the potential for large-scale or noticeable alteration of local topographic conditions. Soil impacts relate to the level of anticipated soil redistribution. These impacts relate to the amount and type of soil disturbance that can be attributed to the proposed action. A determination of significant impact on soil resources could result if any of the following conditions are anticipated to occur:

- Erosion is increased resulting in an appreciable loss of topsoil that cannot be mitigated.
- Increased sedimentation caused by grading or impervious surfacing impedes the function of drainage facilities and watercourses.

1 In addition, a significant impact could also result if construction activities or operations  
2 have a high potential for soil contamination. This consideration is discussed in Section  
3 4.12 *Hazardous Waste, Substances and Materials*, and not repeated here.

4 Geologic impacts can be direct (addressed in this section) or indirect related to  
5 groundwater (covered in Section 4.4 *Hydrology and Water Resources*). A determination  
6 of significant impact on geologic resources could result if any of the following conditions  
7 are anticipated to occur:

- 8 • Project activities cause the movement of earth related to existing geologic  
9 hazards such as sinkholes, caves, mines, or quarries.
- 10 • Project activities cause seismic activity along existing fault lines.

#### 11 **4.3.2.1 Alternative One – New Construction on 6.77 Acres East of the** 12 **Taxiway “D” Extension**

13 No significant alternation of topographic features would result from the proposed action.  
14 Minor grading and filling may occur. Most of the grading would take place to prepare the  
15 site for construction. The site is already disturbed from previous soil stockpiling and use  
16 of the site as a heavy equipment staging area during previous airport improvement  
17 activities. Ground disturbance is anticipated to be less than six acres in total and would  
18 occur only in previously disturbed areas. No significant impact to local or regional  
19 topography is anticipated.

20 The proposed action contains no activity that would cause a significant disturbance to  
21 existing geologic features or conditions. No significant impact to local or regional  
22 geologic conditions is anticipated.

23 Some excavation and ground clearing would occur as a result of facility construction.  
24 Surface disturbance from excavation and construction will be limited to the extent  
25 possible. While most soils within the ROI are classified with moderate or severe  
26 erodibility, soil disturbing activities are only anticipated for locations outside of riparian,  
27 estuarine, and environmentally sensitive and special management zone areas. The  
28 excavated soils will be temporarily maintained nearby at predetermined stockpile  
29 locations and eventually redistributed to other areas as needed. During excavation, soils  
30 have the potential to be carried by strong winds or washed away by heavy rains, which  
31 would constitute an impact, if not managed using Best Management Practices (BMPs)  
32 during construction. The stockpiled dirt from construction has the same potential for  
33 erosion.

34 For disturbances of one acre or more, a Storm Water Pollution Prevention Plan  
35 (SWPPP) is required prior to project implementation. The purpose of the plan is to  
36 minimize erosion through the use of BMPs. These BMPs will ensure that construction-  
37 related soil erosion is kept to a minimum. BMPs would be specifically designed to  
38 control the amount and velocity of runoff and its ability to carry sediment (soil) by  
39 diverting incoming flows. BMPs also include sediment traps to retain sediment on the  
40 project site. Due to the limited amount of excavation that would be required to prepare

the site for facility construction, no appreciable loss of topsoil is anticipated. Increased sedimentation caused by grading and impervious surfacing is not anticipated to impede the function of any drainage facility or watercourse. No significant impact to soil resources from increased erosion or downstream soil redistribution is anticipated.

#### **4.3.2.2 Alternative Two – New Construction on 10 Acres West of the Taxiway “D” Extension**

Potential impacts are similar to those described for Alternative One with the exception that the 10-acre site is currently undisturbed natural terrain.

No significant impact on topographic, geologic or soil resources is anticipated.

#### **4.3.2.3 Alternative Three – Continued Leasing of LAAF Aircraft Hangar and New Leasing of Existing SVMA Facilities**

No change in topographic, geologic, or soil resources of the ROI would occur. No impact on or soil resources is anticipated.

#### **4.3.2.4 Alternative Four – The No Action Alternative**

No change in topographic, geologic, or soil resources of the ROI would occur. No impact on or soil resources is anticipated.

### **4.4 HYDROLOGY AND WATER RESOURCES**

#### **4.4.1 EXISTING CONDITIONS**

This section addresses surface water, ground water, and water quality. The ROI for these resources is defined by the area within which an action may indirectly or directly cause changes in the character of the resource. This includes direct changes due to proposed water consumption or discharge as well as potential surface or subsurface activities that could affect local or regional water quality or availability. The focus of study will be on the Upper San Pedro River Basin (USPB), with specific reference to the Sierra Vista sub watershed.

##### **4.4.1.1 Surface Water Resources**

A majority of the ephemeral surface water features near LAAF/SVMA and in the surrounding area consist of dry washes, locally known as arroyos, and continuous and discontinuous gullies. The streams are usually dry, flowing only in response to significant precipitation events. The ephemeral streams are typically narrow channels with a sand and gravel layer at the bottom. The channels conduct runoff to larger drainage systems.

The San Pedro River is the major regional surface water feature, draining a land area of approximately 4,600 square miles and extending almost 200 miles from its headwaters in Sonora, Mexico to its confluence with the Gila River near Winkelman, Arizona (Figure

4.7). Surface water discharges originating within the Sierra Vista sub watershed are tributary to either the San Pedro or the Babocomari River, which discharges into the San Pedro River. The Babocomari River is ephemeral throughout most of its length although sections near the headwaters, and for about four miles above the mouth, sustain perennial flow due to special geologic conditions (ADWR 1988). The Babocomari River is approximately four (4) miles to the north of LAAF/SVMA.

An unnamed wash is located on the east side of the 6.77-acre site running from the southwest to the northeast (Figures 4.8 and 4.9). The wash is currently crossed by Taxiways K and D, and Runway 12-30 upstream; and SR 90 downstream of the subject site. This wash may be considered a water of the U.S. No surface water resources are present on the 10-acre site or on LAAF near hanger one.

Wetlands are associated with the perennial streams, springs and ponds, and inadvertent wetlands have developed in association with plugged drainage culverts. No wetlands are present on either site.

#### **4.4.1.2 Ground Water Resources**

Sierra Vista and Huachuca City depend entirely on groundwater that is supplied by municipal water wells. All have depths exceeding 800 feet (ft), and most have pumping capacities exceeding 500 gallons per minute (gpm). The municipal wells are typically pumped at a high continuous rate throughout the peak demand period.

Groundwater generally occurs under confined or water table conditions in most of the regional aquifer. It occurs under confined conditions where permeable and saturated alluvium is overlain by impervious silt or clay lenses. The two areas where confined conditions exist in the aquifer in the USBP are the Palominas-Hereford area and the St. David-Benson area (Roeske and Werrel 1973).

A local water table aquifer also exists on the pediment in the Sierra Vista area (Harshbarger and Associates 1974). Groundwater flow in the unconfined portion of the aquifer is generally from the valley margins near the mountains toward the San Pedro River. Local barriers to flow and centers of groundwater pumping cause exceptions to the general flow direction in some areas.

Besides the regional aquifer, at least one local perched aquifer exists along the pediment of the Huachuca Mountains in a zone where the alluvium of the basin fill is underlain at shallow depths by bedrock. A perched aquifer is an isolated pocket of water that occurs above the regional water table. The perched aquifer extends from the area of Carr Canyon toward the Fort Huachuca Military Reservation boundary and extends northeasterly toward the San Pedro River (Harshbarger and Associates 1974).

Two cones of depression, one at the Fort Huachuca-Huachuca City well field, the other in the area of Fort Huachuca-Sierra Vista, have been created by groundwater withdrawal. Groundwater declines have lead to significant soil subsidence in other parts of the United States; however, in the Sierra Vista area the geology and soils are considered relatively low risk for subsidence. Water table elevations at Fort Huachuca

1 decreased 40 to 50 ft in the period between 1940 and 1985. Groundwater levels  
2 continued to decline at a rate of 1 to 2 ft per year, primarily as a result of withdrawal  
3 rates that exceeded recharge rates until the late 1980's when water management  
4 surfaced as an issue (USFWS 2002). Since that time, annual water withdrawals from  
5 the aquifer have decreased due to successful water management by Fort Huachuca  
6 and surrounding communities. The Sierra Vista Subwatershed and USBP are subjects  
7 of considerable hydrologic and biological research relating to interactions between local  
8 water levels and sensitive biological conditions in the region.

#### 9 **4.4.1.3 Water Quality**

10 Generally, the chemical quality of the groundwater obtained by Fort Huachuca, the city  
11 of Sierra Vista and other users in the USBP is good and is considered suitable for  
12 domestic uses (USAG Fort Huachuca 2002). However, in several areas (St. David and  
13 Benson), fluoride and sulfate concentrations at or above drinking water standards have  
14 been noted (Coffman Associates, Inc. 2001). Groundwater on Fort Huachuca and at  
15 SVMA is treated with chlorine.

#### 16 **4.4.2 CONSEQUENCES**

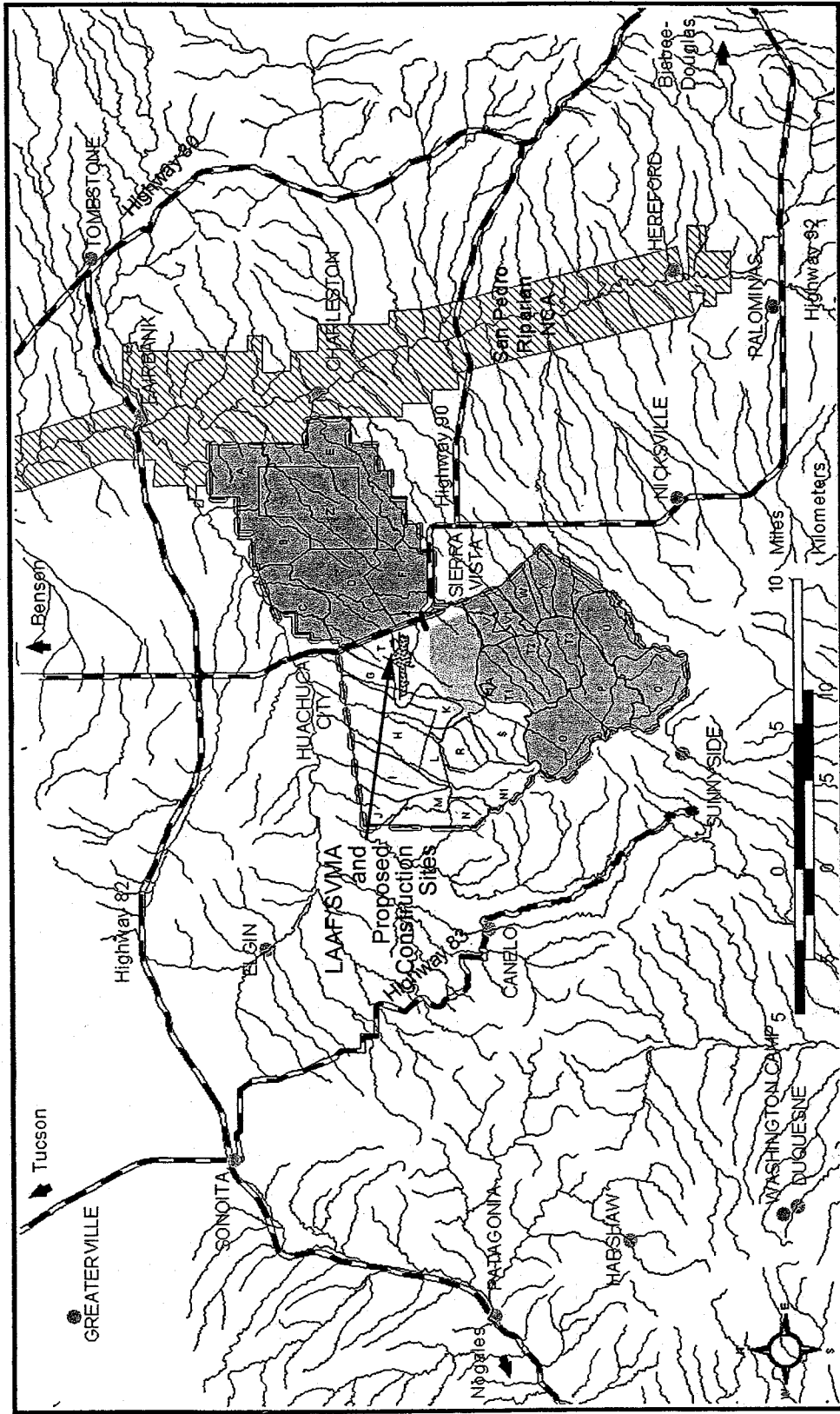
17 Potential impacts to hydrology and water resources (surface water and groundwater)  
18 could be direct or indirect. A determination of significant impact on hydrology or water  
19 resources could result if any of the following conditions are anticipated to occur:

- 20 • An increase in soil settlement or ground swelling that damages structures,  
21 utilities, or other facilities caused by inundation and/or changes in the  
22 groundwater level.
- 23 • Storm water and/or runoff constituents significantly degrade downstream surface  
24 water quality.
- 25 • Grading or other construction activities discontinue the function of drainage  
26 facilities or watercourses.
- 27 • A usable groundwater aquifer for municipal, private, or agricultural purposes is  
28 adversely affected by depletion or contamination.

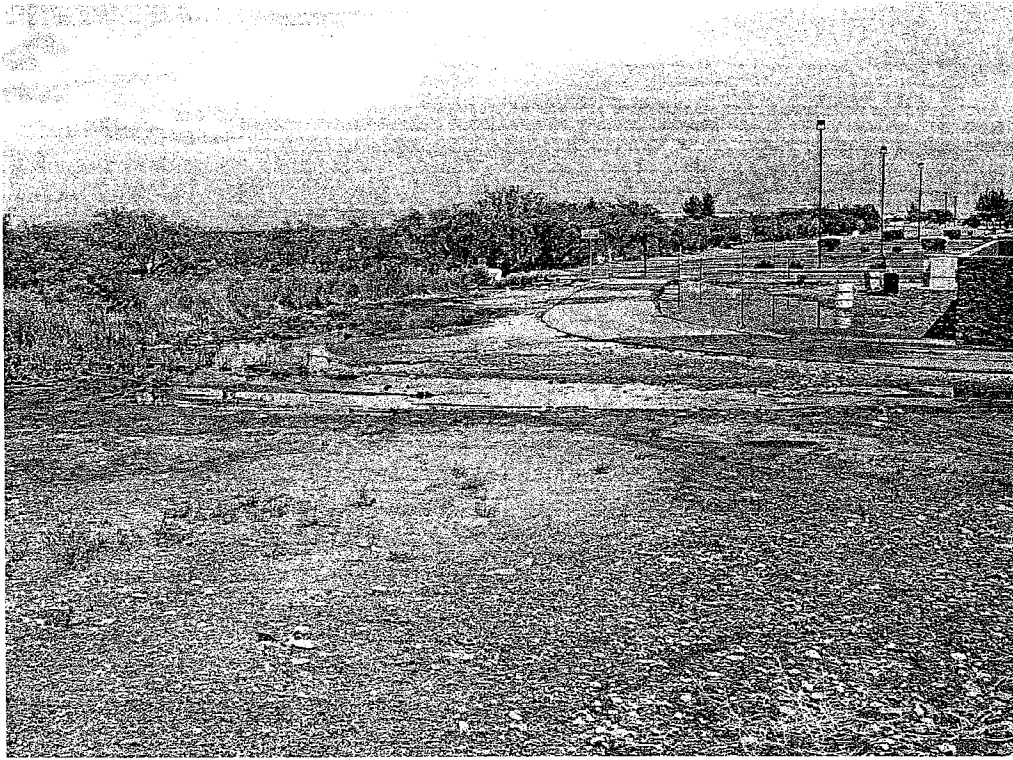
#### 29 **4.4.2.1 Alternative One – New Construction on 6.77 Acres East of the** 30 **Taxiway “D” Extension**

31 The proposed action is not anticipated to induce runoff or concentrated flows at levels  
32 causing erosion that affects slope stability or endangers facilities or wildlife habitat from  
33 oversaturation of the soil or undercutting of slopes. The proposed action is not  
34 anticipated to cause an increase in soil settlement or ground swelling that would  
35 damage structures, utilities or other facilities.

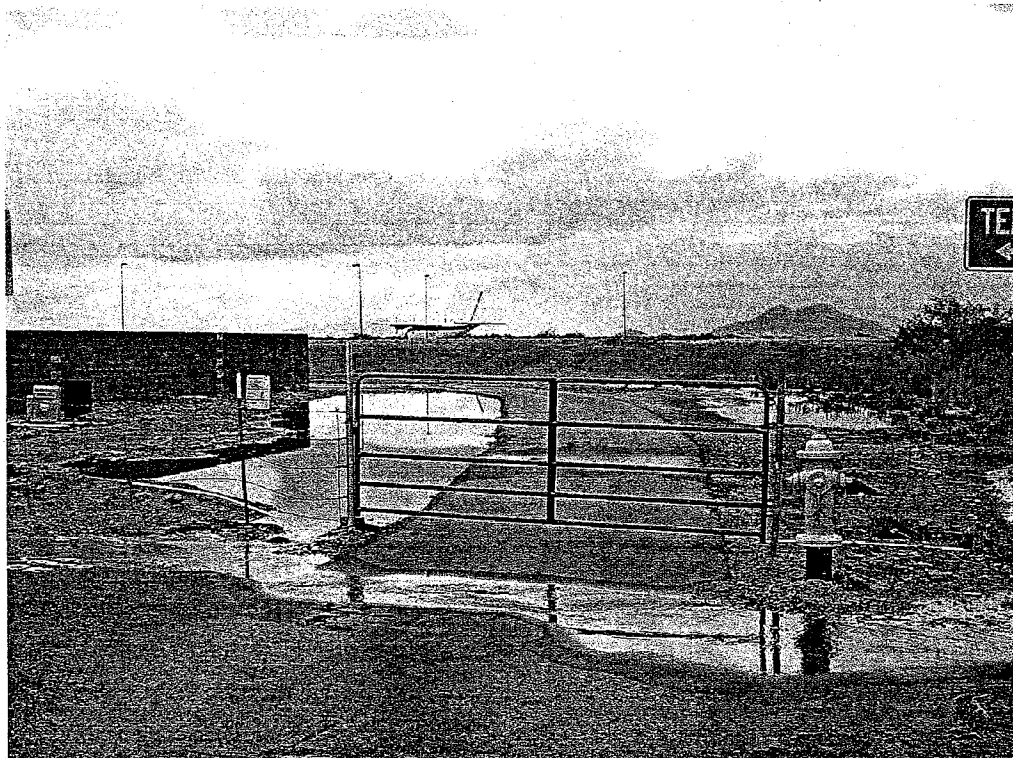
36 No release of hazardous substances or pollutants into surface water or groundwater is  
37 anticipated from the proposed action. No injection of substances into the groundwater



**Figure 4.7**  
**Regional Surface Water Resources**



**Figure 4.8 Photograph from 6.77 acre parcel looking east across unnamed wash**



**Figure 4.9 Photograph looking west toward unnamed wash and 6.77 acre parcel**

1 is anticipated. No impact on the quality of groundwater is anticipated as a result of the  
2 proposed action and therefore no impact to surface or groundwater quality is anticipated

3 Storm water runoff associated with the airport is currently directed to the northeast  
4 portion of the airfield where it ultimately drains into the Babocomari River. Impervious  
5 surfaces such as rooftops, paved parking lots, roadways, and runways, are specific  
6 characteristics which may affect the hydrology (runoff quantity) and water quality of a  
7 given drainage basin. Surface water runoff from paved surfaces is classified as nonpoint  
8 source pollution, meaning that the runoff flows in "sheets." The proposed action is  
9 anticipated to create only a minor increase in additional nonpoint source pollution in the  
10 area. No significant impact to water quality on site or downstream is anticipated.

11 As a specific plan for the construction of a USBP facility on the 6.77-acre site is not  
12 currently available, the exact impact to the nearby unnamed wash is unknown. Efforts  
13 will be made to avoid the wash, but given its location on the property, it may be  
14 necessary to cross the wash to provide roadway access to the site. This crossing may  
15 be considered "a linear transportation crossing" under U.S. Army Corps of Engineers  
16 (USACE) Clean Water Act (CWA) Section 404 guidelines.

17 For linear transportation projects under USACE's Nation Wide Permit (NWP) 14,  
18 impacts are limited to 1/3 acre of waters of the U.S., and the length of fill for the  
19 crossing of waters of the U.S. is limited to 200 linear feet. NWP 14 does not authorize  
20 stream channelization and authorized activities must not cause more than minimal  
21 changes to the hydraulic flow characteristics of the wash. The city of Sierra Vista  
22 commits to complying with CWA Section 404 guidelines, including wherever possible,  
23 avoiding impacts to the wash, and, as directed by the USACE, and minimizing and  
24 mitigating impacts where they cannot be avoided. Generally, no mitigation is required  
25 for permanent impacts to waters of the U.S. which are below the 1/3 acre and 200 linear  
26 feet threshold. If impacts under this threshold are felt to be more than minimal, the  
27 USACE may, at their discretion, require mitigation.

28 Table 4.1 identifies anticipated water use resulting from the proposed action and its  
29 forecasted regional impact. Water use was calculated by adding on-airport direct  
30 employment and facility operation water and wastewater impacts with off-airport direct  
31 employment water and wastewater impacts and off-airport induced population and  
32 economic activity water and wastewater impacts. Anticipated water use during  
33 construction activity is included under the miscellaneous water use estimate for the first  
34 year of operation. As indicated in Table 4.1, the proposed action would result in a  
35 combined net annual water use of approximately 6.2 acre-feet/year. This water demand  
36 can be accommodated by the two existing on-airport wells.

37 Wastewater generated at the airport would be captured on-site until connection to the  
38 Fort Huachuca or city of Sierra Vista wastewater treatment system occurs in the future.

**Table 4.1 Projected Annual Consumptive Water Use**

On-Airport Net Annual Water Consumption (acre-feet)	Off-Airport Net Annual Water Consumption (acre-feet)	Off-Airport Net Annual Induced Water Consumption (acre-feet)	Combined Net Annual Water Consumption (acre-feet)
0.517169	0.701658	4.958553	6.177480

From Appendix A, Table 4

***Effects of Additional Groundwater Pumping on the Local Groundwater Aquifer and San Pedro River Base Flow***

As previously discussed, groundwater pumping in the Fort Huachuca-Sierra Vista area has created a large cone or cones of depression in the groundwater aquifer which extends from about the Babocomari River southeast for at least 15 miles. Ground water elevation has declined by as much as 90 feet in this area. If the cone of depression reaches (or if it has already reached) the San Pedro River, it could reverse the flow of ground water, cause gaining reaches to become losing reaches, and result in declines or loss of base-flow (ADWR 1994, Table 9). Before actually reaching the river, base flow is expected to decline due to reduced hydraulic head between the cone of depression and the river. Such declines have probably been occurring for some time (MacNish 1998, San Pedro Expert Study Team 1999), but the magnitude of decline currently attributable to groundwater pumping and the timing of when the river might be significantly affected by the Fort Huachuca/Sierra Vista cone of depression is unclear. Modeling by WESTEC (1996) estimated that agricultural users were responsible for 94 percent of the historic loss of river flow through 1988, while municipal and military users were only responsible for six percent. However, the authors did not calculate current contributions to observed base flow declines. Modeling by ASL (1998) suggests significant effects may occur by 2020 (assuming effluent recharge by Sierra Vista through 2020), while ADWR (1991) believes the river may not be significantly affected for 40 years or more. Although the timing of the effects is uncertain, most modeling efforts and studies conclude that flows will continue to diminish or be lost, and in time riparian acreage will be reduced along the upper San Pedro River if groundwater pumping in excess of recharge continues unmitigated (USFWS 2002).

The entire 6.2 acre-feet/year of anticipated net annual water demand will be offset through water conservation projects implemented as a part of the proposed action. Therefore, Alternative One is anticipated to have no net water use and not result in any usable groundwater aquifer for municipal, private, or agricultural purposes (including the Sierra Vista sub watershed) being adversely affected by depletion or contamination. No significant impact to groundwater resources are anticipated as a result of the proposed action under Alternative One.

1 Additional benefits to groundwater conditions will result through a number of additional  
2 low water-use feature requirements at the proposed USBP facility and the on-site  
3 retention/detention of storm water.

#### 4 **4.4.2.2 Alternative Two – New Construction on 10 Acres West of the Taxiway** 5 **“D” Extension**

6 Potential impacts are similar to those described for Alternative One with the exception  
7 that the 10-acre site is currently undisturbed natural terrain and Fort Huachuca requires  
8 water use mitigation for all new FTE positions assigned to the installation.

9 Although undisturbed, the 10-acre site does not contain any wash, drainage or other  
10 water body that would be affected by the proposed construction activity.

11 The 6.2 acre-feet/year of consumptive water use would be entirely offset through water  
12 conservation projects implemented in accordance with USAIC&FH Policy 119, *Fort*  
13 *Huachuca Water Use Mitigation Policy* (USAIC&FH 2002). Therefore, Alternative Two  
14 would not increase annual water consumption at Fort Huachuca or in the ROI and have  
15 no impact on water resources in the Sierra Vista sub watershed or greater region.

16 Additional benefits to groundwater conditions will result through a number of additional  
17 low water-use feature requirements at the proposed USBP facility and the on-site  
18 retention/detention of storm water.

#### 19 **4.4.2.3 Alternative Three – Continued Leasing of LAAF Aircraft Hangar and** 20 **New Leasing of Existing SVMA Facilities**

21 Potential impacts are similar to those described for Alternative One with the exception  
22 that no construction activities would occur. No significant impact on hydrology or water  
23 resources is anticipated.

#### 24 **4.4.2.4 Alternative Four – The No Action Alternative**

25 No change in existing hydrology or water resource conditions would occur. No impact  
26 on hydrology or water resources is anticipated.

### 27 **4.5 BIOLOGICAL RESOURCES**

#### 28 **4.5.1 EXISTING CONDITIONS**

29 The ROI for biological resources includes the LAAF/SVMA and the adjacent region, but  
30 is limited to areas where ground disturbance or USBP activities related to the proposed  
31 action could occur or cause impact. Biological resources are discussed in terms of  
32 vegetation, habitat types, and wildlife species that have been observed or that have the  
33 potential to occur within the study area. In addition, species protected by the  
34 Endangered Species Act of 1973, as amended (16 U.S.C. § 1531) are addressed.

1 The U.S. Fish and Wildlife Service (USFWS) and the Arizona Game and Fish  
2 Department (AGFD) were contacted for information regarding wildlife, plants, and native  
3 habitat in the vicinity of LAAF/SVMA. Both agencies were asked whether any known  
4 threatened or endangered species, or other species of special significance are known to  
5 exist within the ROI. Letters received in response are included in Appendix B. Further  
6 discussion on threatened and endangered species is provided in Section 4.5.1.3  
7 *Threatened and Endangered Species*.

#### 8 **4.5.1.1 Vegetation**

9 LAAF/SVMA is located within a high desert plain. The vegetation surrounding  
10 LAAF/SVMA is typical of open grassland and mesquite-grass savanna habitats which  
11 cover approximately 7,100 acres on Fort Huachuca (Figure 4.10) (USAG Fort Huachuca  
12 2002). Elevations for this habitat type range from approximately 4,200 to 5,100 feet.  
13 This is the largest habitat type occurring in the area.

14 Common species include velvet mesquite (*Prosopis velutina*), agaves (*Agave spp.*),  
15 yuccas (*Yucca spp.*), sotol (*Dasyllirion wheeleri*), rabbit brush (*Chrysothamnus*  
16 *nauseosus*), and a variety of grasses including grammas (*Bouteloua spp.*), lovegrass  
17 (*Eragrostis spp.*), and muhly (*Muhlenbergia spp.*) (USAG Fort Huachuca 2002). Cacti,  
18 such as cholla and prickly pear (*Opuntia spp.*), pincushion (*Mammillaria spp.*), and  
19 hedgehog (*Echinocereus spp.*) are also common (USAG Fort Huachuca 2002). The 10-  
20 acre parcel discussed under Alternative Two contains this type of native vegetation  
21 (Figure 4.11).

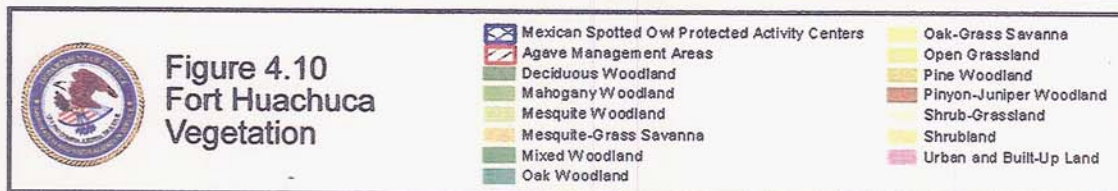
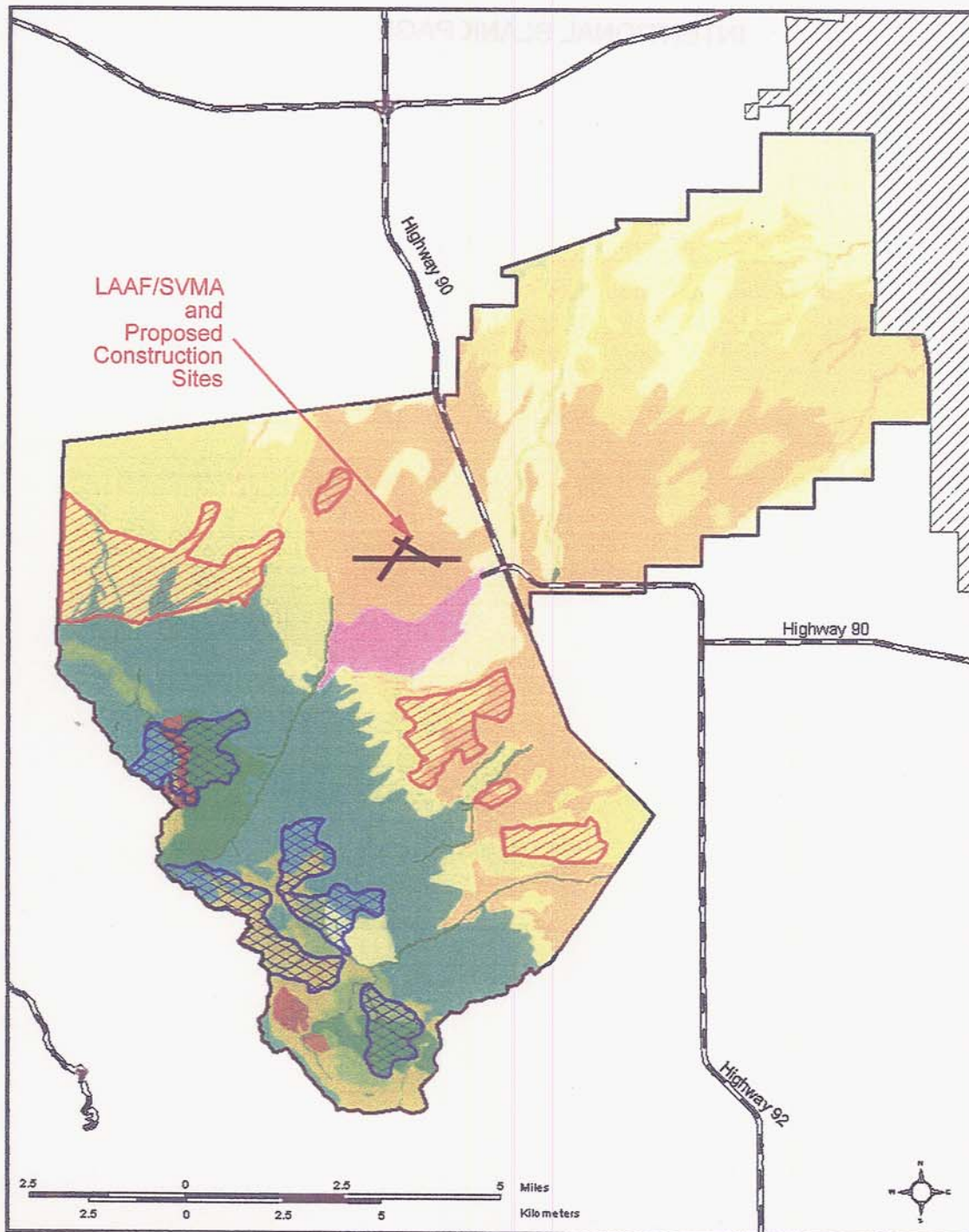
22 The 6.77-acre parcel has been used to stockpile dirt for previous construction activities  
23 and is highly disturbed with representative plants consisting of Russian Thistle (*Salsola*  
24 *iberica*) and non-native grasses (Figure 4.12 through 4.14). In the late 1980s, the 6.77-  
25 acre site was part of an area raked to a depth of 36 inches to remove all unexploded  
26 ordnance (Coffman Associates, Inc. 2001). This action removed all native vegetation  
27 on the site. The majority of vegetation on LAAF/SVMA consists of maintained grassy  
28 areas or non-irrigated land.

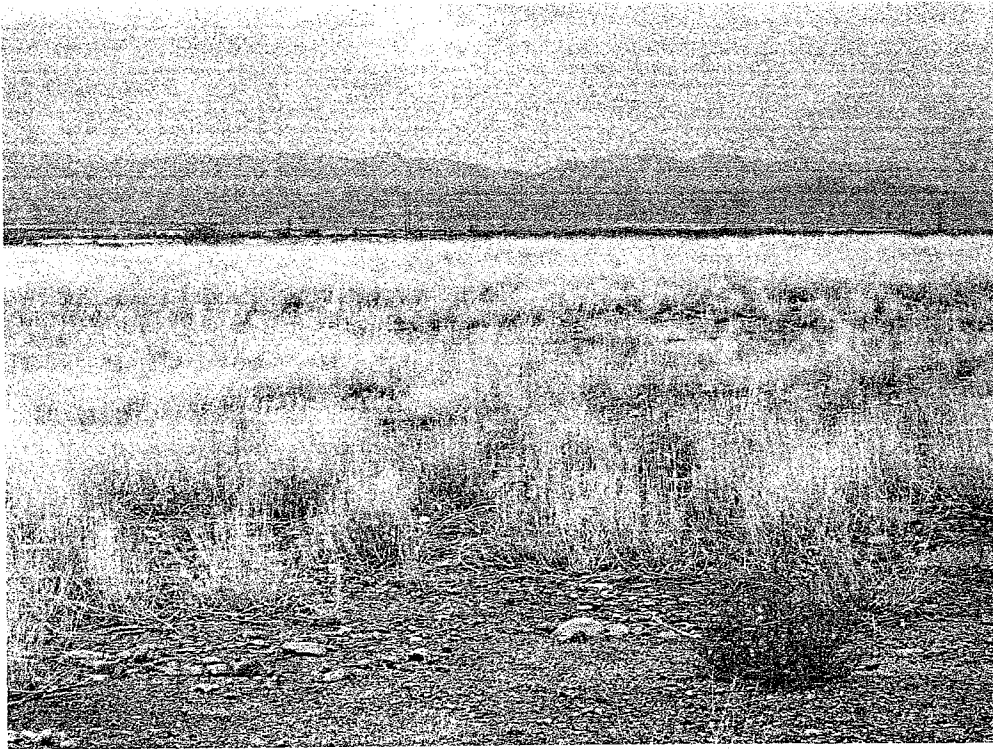
#### 29 **4.5.1.2 Wildlife**

30 Wildlife species likely to occur at LAAF/SVMA include reptiles such as desert spiny  
31 lizard and Texas horned lizard; mammals such as Harris' antelope squirrel, desert  
32 cottontail, and black-tailed jack rabbit; and birds such as cactus wren and curve-billed  
33 thrasher.

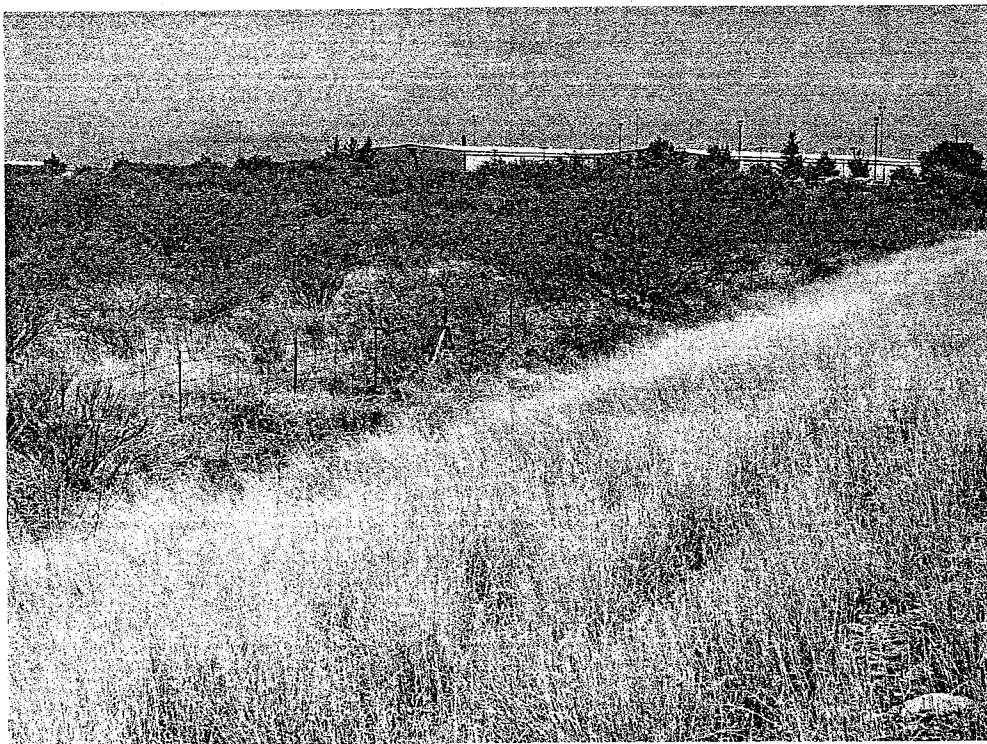
#### 34 **4.5.1.3 Threatened and Endangered Species**

35 Section 7 of the Endangered Species Act, as amended, requires each Federal agency  
36 to ensure that "any action authorized, funded, or carried out by such agency...is not  
37 likely to jeopardize the continued existence of any endangered species or threatened  
38 species or result in the destruction or adverse modifications of habitat of such species  
39 which is determined by the Secretary, after consultation as appropriate with the affected  
40 States, to be critical, unless such agency has been granted an exception of such action

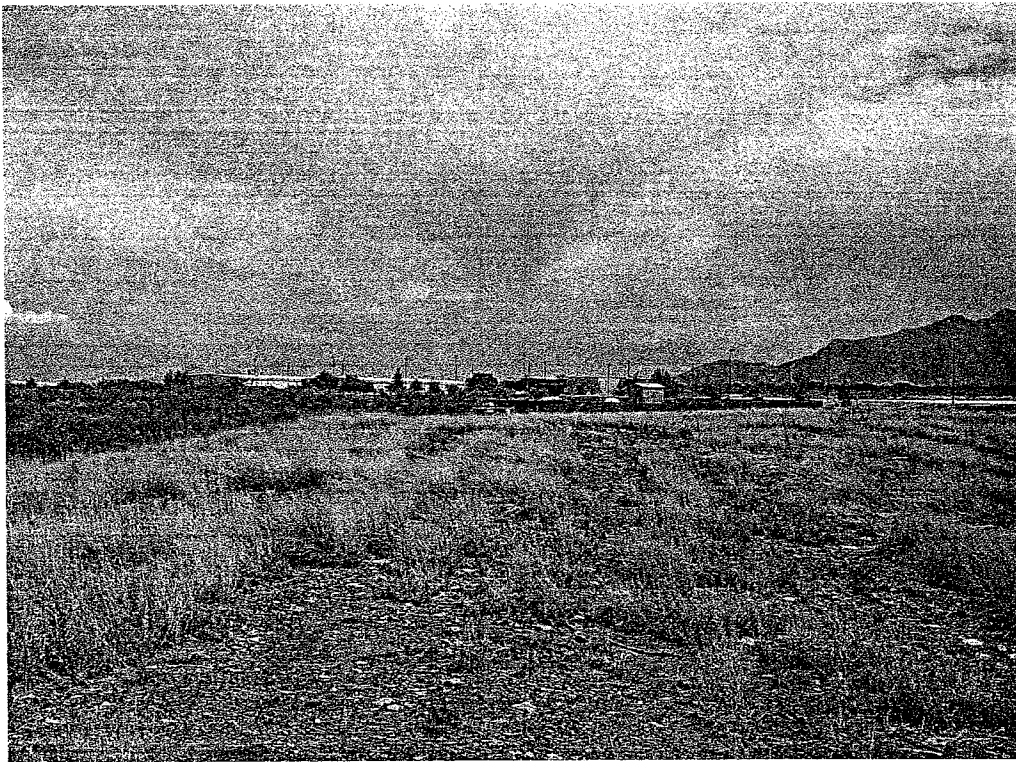




**Figure 4.11 Photograph showing disturbed non-native grasslands that occur on the majority of the 6.77 acre parcel**



**Figure 4.12 Photograph along northern boundary of 6.77-acre parcel showing change in vegetation communities on and off-site**



**Figure 4.13 Photograph extensive disturbance and lack of native vegetation on 6.77-acre parcel**



**Figure 4.14 Photograph showing representative mesquite-grassland habitat on 10-acre parcel**

1 by the Committee...". Section 7 coordination further requires that a determination be  
2 made as to the action's likelihood to jeopardize the continued existence of any species  
3 proposed to be listed as a threatened or endangered species, or in the destruction or  
4 adverse modification of critical habitat proposed to be designated for such candidate  
5 species.

6 A listing of 30 species in Cochise County that are listed or proposed to be listed as  
7 either threatened or endangered was received from the USFWS on July 31, 2002. In  
8 addition, a recent Biological Assessment at Fort Huachuca (USAG Fort Huachuca  
9 2002) documented the potential for species occurrence at the Fort and in the region.  
10 Table 4.2 contains a listing of these species, habitat requirements and their potential to  
11 occur at LAAF/SVMA.

12 Of the 30 federal status species listed in Table 4.2, only three species are expected to  
13 occur in the vicinity of LAAF/SVMA. These three species are described in further detail.

#### 14 ***Lesser long-nosed bat***

15 Caves on Fort Huachuca are used as day roosts by the lesser long-nosed bat  
16 (*Leptonycteris curasoae yerbabuenae*). No caves or mines are present near the airport;  
17 however, there are a number of known colonies within foraging distance. This species  
18 feeds on nectar from the flowers of columnar cactus (such as the saguaro and organ  
19 pipe cactus) and from paniculate agaves. These cacti and agaves are not present at  
20 the airport but do occur adjacent to the airport. Fort Huachuca has established Agave  
21 Management Areas to protect the largest populations of Palmer's agaves. While the  
22 airport is not within or directly adjacent to an Agave Management Area, there is a  
23 potential for foraging bats to fly near the airport at night and for USBP night operations  
24 to fly over the foraging habitat during approach and departures to the west of the airport.  
25 No critical habitat has been designated for this species.

#### 26 ***Bald eagle***

27 The bald eagle (*Haliaeetus leucocephalus*) inhabits large trees or cliffs near water with  
28 abundant prey. While there is no suitable habitat for this bird within the ROI, a bald  
29 eagle sighting was made on the west range of Fort Huachuca as recent as 1998 (USAG  
30 Fort Huachuca 2002). Suitable nesting habitat or habitat for congregations of wintering  
31 birds does not exist at the airport or on Fort Huachuca (USAG Fort Huachuca 2002).  
32 Small numbers of eagles may winter intermittently in large cottonwood or sycamore  
33 trees along the San Pedro River. No critical habitat has been established for this  
34 species.

**Table 4.2 Federal Status Species, Habitat Requirements, and Likelihood of Occurrence at or near LAAF/SVMA**

Common Name Scientific Name	Federal Status <sup>1</sup>	Habitat Requirements	Likelihood of Occurrence at or near LAAF/SVMA <sup>2</sup>
<b>BIRDS</b>			
Bald eagle <i>Haliaeetus leucocephalus</i>	T	Near coasts, lakes or rivers; nests in large treetops or on cliffs near water.	Transient area visitor during migration; no suitable nesting habitat at airport.
Cactus ferruginous pygmy-owl <i>Glaucidium brasilianum cactorum</i>	E	Riverbottom woodlands and paloverde cacti-mixed scrub associations of the Sonoran Desert below 4000 feet.	No suitable habitat; not expected to occur at airport.
Mexican spotted owl <i>Strix occidentalis lucida</i>	T	Canyons and forested habitat with uneven-aged stands and high tree density.	Known breeding areas on Fort Huachuca; not expected to occur at airport.
Northern aplomado falcon <i>Falco femoralis septentrionalis</i>	E	Grasslands and savannas with low ground cover and mesquite or yucca for nesting habitat.	Potential habitat is present in the area; however believed to be extirpated from Arizona and not expected to occur at airport.
Southwestern willow flycatcher <i>Empidonax trailii extimus</i>	E	Dense riparian habitats along streams, rivers, and wetlands with cottonwood, willow, box elder, and buttonbush.	No suitable habitat; not expected to occur at airport.
Whooping crane <i>Grus Americana</i>	E	Marshes, prairies, and river bottoms.	No suitable habitat; not expected to occur at airport.
Mountain plover <i>Charadrius montanus</i>	P	Open arid plains and short grass prairies	Potential habitat is present in the area; however no confirmed sightings in recent years and not expected to occur at airport.
Brown pelican <i>Pelecanus occidentalis californicus</i>	E	Coastal land and islands; Arizona lakes and rivers.	No suitable habitat; not expected to occur at airport.
Yellow-billed cuckoo <i>Coccyzus americanus</i>	C	Large blocks of riparian woodlands.	No suitable habitat; not expected to occur at airport.
<b>MAMMALS</b>			
Jaguar <i>Panthera onca</i>	E	Near water in Sonoran Desertscrub up through subalpine conifer forest. Prefer Madrean evergreen-woodlands.	Potential habitat is present in the area; however not expected to occur at airport.
Lesser long-nosed bat <i>Leptonycteris curasoae yerbabuenae</i>	E	Roosts in caves and mines and forages on agaves, saguaro and columnar cacti.	Known roosts on Fort Huachuca and known foraging areas near airport.
Mexican gray wolf <i>Canis lupus baileyi</i>	E	Chaparral, woodlands, and forested area. Known to cross open desert.	Potential habitat is present in the area; however believed to be extirpated from Arizona and not expected to occur at airport.

**Table 4.2 Federal Status Species, Habitat Requirements, and  
Likelihood of Occurrence at or near LAAF/SVMA Cont.**

Common Name Scientific Name	Federal Status <sup>1</sup>	Habitat Requirements	Likelihood of Occurrence at or near LAAF/SVMA <sup>2</sup>
<b>MAMMALS CONT.</b>			
Ocelot <i>Felis pardalis</i>	E	Desert scrub communities in AZ with dense cover. Preys on small rodents and birds.	No suitable habitat; not expected to occur at airport.
Black-tailed prairie dog <i>Cynomys ludovicianus</i>	C	Burrows in plains and grasslands.	Potential habitat is present in the area; however believed to be extirpated from Arizona and not expected to occur at airport.
<b>FISH</b>			
Beautiful shiner <i>Cyprinella formosa</i>	T	Small to medium sized streams and ponds with sand, gravel and rock bottoms.	No suitable habitat; not expected to occur at airport.
Desert pupfish <i>Cyprinodon macularius</i>	E	Shallow desert springs, small streams and marshes below 5000 feet elevation. Designated critical habitat in Pima County, Arizona and Imperial County, California.	No suitable habitat; not expected to occur at airport.
Gila topminnow <i>Poeciliopsis occidentalis occidentalis</i>	E	Vegetated shallows of small streams, springs, or cienegas.	No suitable habitat; not expected to occur at airport.
Yaqui catfish <i>Ictalurus pricei</i>	T	Shallow water of desert springs, small streams and marshes below 5,000 feet elevation.	No suitable habitat; not expected to occur at airport.
Yaqui chub <i>Gila purpurea</i>	E	Small streams, springs and cienegas below 4,500 feet elevation.	No suitable habitat; not expected to occur at airport.
Yaqui topminnow <i>Poeciliopsis occidentalis sonoriensis</i>	E	Inhabits pools, springs, cienegas, and streams between 2,000-3,500 feet in elevation.	No suitable habitat; not expected to occur at airport.
Gila chub <i>Gila intermedia</i>	C	Small streams, springs and cienegas below 4,500 feet elevation.	No suitable habitat; not expected to occur at airport.
<b>REPTILES AND AMPHIBIANS</b>			
New Mexican ridge-nosed rattlesnake <i>Crotalus willardi obscurus</i>	T	Primarily inhabits canyon bottoms in pine-oak communities.	No suitable habitat; not expected to occur at airport.
Sonora tiger salamander <i>Ambystoma tigrinum stebbinsi</i>	E	Inhabits stock tanks and impounded cienegas in San Rafael Valley, Huachuca Mountains.	Known to occur on Fort Huachuca; no suitable habitat and not expected to occur at airport.

**Table 4.2 Federal Status Species, Habitat Requirements, and  
Likelihood of Occurrence at or near LAAF/SVMA Cont.**

Common Name Scientific Name	Federal Status <sup>1</sup>	Habitat Requirements	Likelihood of Occurrence at or near LAAF/SVMA <sup>2</sup>
<b>REPTILES AND AMPHIBIANS CONT.</b>			
Chiricahua leopard frog <i>Rana chiricahuensis</i>	P	Streams, rivers, backwaters, ponds, and stock tanks.	No suitable habitat; not expected to occur at airport.
Ramsey canyon leopard frog <i>Rana subaquacocalis</i>	CE	Artificial ponds in Huachuca Mountains.	Known to occur on Fort Huachuca; no suitable habitat and not expected to occur at airport.
<b>PLANTS</b>			
Canelo Hills ladies' tresses <i>Spiranthes delitescens</i>	E	Finely grained, highly organic, saturated soils of cienegas.	Known to occur on Babocomari River upstream of airport; no suitable habitat and not expected to occur at airport.
Huachuca water umbel <i>Lilaeopsis schaffneriana</i>	E	Cienegas, perennial low gradient streams, wetlands.	Known to occur on Fort Huachuca and in San Pedro NCA; no suitable habitat and not expected to occur at airport.
Pima pineapple cactus <i>Coryphantha scheeri robustispina</i>	E	Alluvial basins or hillsides in semi-desert grassland and Sonoran desertscrub; 2,300- 4,500 feet elevations.	No suitable habitat; not expected to occur at airport.
Lemmon fleabane <i>Erigeron lemmonii</i>	C	Grows in dense clumps in crevasse, ledges and boulders in canyon bottom on pine-oak woodland.	Known to occur on Fort Huachuca; no suitable habitat and not expected to occur at airport.
<b>INVERTEBRATES</b>			
Huachuca springsnail <i>Pyrgulopsis thompsoni</i>	C	Aquatic areas, small springs with vegetation slow to moderate flow.	Known to occur on Fort Huachuca; no suitable habitat and not expected to occur at airport.

Sources: USFWS 2002; USAG Fort Huachuca 2002; AGFD 2002

Notes (1) T= Threatened, E=Endangered, C=Candidate, P=Proposed, CA=Conservation Agreement

(2) For the purposes of this assessment, near LAAF/SVMA shall be construed to be within 2 statute miles of the airport.

### **Canelo Hills ladies' tresses**

The Canelo Hills ladies' tresses (*Spiranthes delitescens*) is known from five sites at about 5,000 feet elevation in the San Pedro River Watershed. Four of the five populations occur to the west of Fort Huachuca in the San Rafael Valley and Canelo Hills. The fifth population occurs on private land at the Babocomari Cienega, located approximately 1.5 miles north of the northwest corner of Fort Huachuca (USAG Fort Huachuca 2002). Because the Babocomari River downstream of this population does not contain perennial, transitional wet meadows, it is not considered good potential habitat for this orchid (USAG Fort Huachuca 2002). The species is not known to occur at the airport or on Fort Huachuca and no potential habitat is present at the airport.

None of the federal status species were detected during a 2002 site visit (Vernadero Consulting 2002a), and no critical habitat exists at the airport. The AGFD identified 8 special status species within 5 miles of LAAF/SVMA (AGFD 2002). Of these 8 species, 2 species (yellow-billed cuckoo and southwestern willow flycatcher) were addressed in Table 4.2. The other 6 species included the longfin dace (*agusia chrysogaster*), Sparague's pipit (*anthus spragueii*), northern gray hawk (*asturina nitida maxima*), desert sucker (*catostomus clarki*), and lowland leopard frog (*rana yaapaisensis*). None of these species are expected to occur at the airport.

#### **4.5.1.4 San Pedro Riparian National Conservation Area**

The upper San Pedro River is characterized by a relatively broad floodplain that meanders through the San Pedro River Valley. The NCA consists of cottonwood-willow and herbaceous associations near the river channel, with mesquite bosque on the higher terraces. Pond and marshland communities, saltceder (*Tamarix chinensis*) four-wing saltbush (*Atriplex canescens*), and sacaton (*Sporobolus wrightii*) associations exist in the riparian zone of the river. The upper San Pedro River flows perennially from approximately Hereford to about four miles north of the Charleston Stream Gage.

Areas within the nearby San Pedro Riparian NCA are designated by the USFWS as Critical Habitat for three federally-listed species: Huachuca water umbel (a plant), spikedace (a fish) and the loach minnow (a fish). The southwestern willow flycatcher (a bird and a federally-listed species) has been observed in the NCA.

Populations of the Huachuca water umbel are known to exist in the NCA (USFWS 2002). The southwestern willow flycatcher was recorded along the San Pedro as recent as 1997. Surveys for the species along the NCA in 2001 did not detect any flycatchers however one incidental sighting was reported by a BLM official in the same year (USFWS 2002). Neither of the fish are known or expected in the NCA, however the river is an important recovery habitat for both fish species (USFWS 2002). Detailed accounts of the current status of these four species and environmental baseline for the action area is presented in USFWS 2002 and incorporated here by reference. A summary discussion follows.

#### **Southwestern willow flycatcher**

The southwestern willow flycatcher (*Empidonax traillii extimus*) has a federal designation as an endangered subspecies. In southern Arizona, this subspecies inhabits the San Pedro River system, primarily in the lower reaches of the river north of Benson. This subspecies breeds in dense riparian forests and thickets. In 1996, a possible nesting pair was identified in the vicinity of St. David, Arizona, approximately 30 miles downstream of the Fort Huachuca installation boundary. In 1997 an individual was confirmed within the San Pedro Riparian NCA during the annual BLM surveys for this species. Surveys for the species along the NCA in 2001 did not detect any flycatchers however one incidental sighting was reported by a BLM official in the same year (USFWS 2002).

### ***Huachuca water umbel***

The Huachuca water umbel (*Lilaeopsis schaffneriana* var. *recurva*) has a federal designation as an endangered subspecies. The plant inhabits cienegas and associated vegetation within Sonoran desertscrub, grassland, oak woodland, and coniferous forests at elevations of 4,000 to 6,500 ft (1,210 to 1,980 m). Presently, the Huachuca water umbel occurs in southwestern New Mexico, southeastern Arizona, and adjacent Sonora, Mexico (USFWS 2002). In Arizona, populations occur in Pima, Santa Cruz, and Cochise counties. The Huachuca water umbel has been documented from 24 sites in Arizona, six of which have been extirpated. These sites occur in the following four major watersheds: the San Pedro River, Santa Cruz River, Rio Yaqui, and Rio Sonora (ENRD 1998). The Huachuca water umbel is known to occur along the San Pedro River and the entire NCA is considered potential habitat (USFWS 2002). These populations are vulnerable to potential adverse effects related to groundwater deficits in the area (USFWS 2002).

### ***Spikedace***

The spikedace (*Meda fulgida*) has federal designation as a threatened species. It typically inhabits shallow portions of stream channels where rapid flow occurs over sand and gravel substrates (USAG Fort Huachuca 2002). Habitat use by this species has been reported to vary with age, geographical location, and season (USAG Fort Huachuca 2002). Juveniles inhabit quiet pools with soft, fine-grained bottoms along the stream periphery. In winter months, adults move toward stream margins where they inhabit cobble-bottomed areas.

The spikedace is endemic to the Gila River basin and historically occurred throughout New Mexico, Arizona and Sonora (Mexico) below 6,000 ft (1828 m) (USAG Fort Huachuca 2002). In Arizona, this species was once widespread throughout the large river systems including the Gila, Salt, Verde, San Francisco, and San Pedro River systems. Currently in Arizona, populations of the spikedace are limited to less than 118 miles (190 km) of streams in Eagle Creek, the upper Verde River, and Aravaipa Creek. The Aravaipa Creek population is the only extant population in the San Pedro River Basin. The fish has otherwise been extirpated from the mainstream of the San Pedro River and its tributaries (USAG Fort Huachuca 2002).

### ***Loach minnow***

The loach minnow (*Rhinichthys cobitis*) has federal designation as a threatened species. This small fish inhabits shallow portions of rapidly flowing, turbulent streams characterized by moderate to high gradients at elevations below approximately 7,000 ft (2,200 m) (USAG Fort Huachuca 2002). This species inhabits areas of elevated cobble and rubble substrates with rocks and crevices, generally located along stream margins or in eddying currents at the heads of riffles. Historically, the loach minnow occurred in the Gila River basin of New Mexico, Arizona, and Sonora (Mexico). In Arizona, loach minnows were once known to occur in the Salt, White, East Fork White, Verde, Gila, San Francisco, Blue, and the San Pedro Rivers. They were also known to occur in Aravaipa and Eagle Creeks and other major tributaries of large streams. The loach

minnow was last recorded from the San Pedro River in the 1950s (USAG Fort Huachuca 2002).

#### **4.5.2 CONSEQUENCES**

Impacts on biological resources could occur from facility construction and operation and increased air operations at LAAF/SVMA. A determination of significant impact on biological resources (to include vegetation, wildlife and protected species) could result if any of the following conditions are anticipated to occur:

- Jeopardy to populations of a federal status species.
- Permanent loss of a limited resource of significant importance to a federal status threatened, endangered, or candidate species.
- Complete disruption of a heavy-use wildlife movement corridor.

##### **4.5.2.1 Alternative One – New Construction on 6.77 Acres East of the Taxiway “D” Extension**

Construction activities associated with the proposed action would be implemented within the boundary of the existing SVMA property, which is dominated by extensive urbanization and development. As stated above, ground cover at the site is predominately invasive weeds and non-native grasses. A minor, temporary impact on wildlife is possible during construction activities, where noise and human activity may disturb a roaming or foraging animal. This impact would be negligible, of short duration, and would not result in a significant impact on wildlife in the ROI. The common wildlife species found at and surrounding the proposed construction site would be displaced during construction. However, considering that higher quality native habitat exists in the immediate vicinity, the impact of this habitat displacement is expected to be relatively minor and not significant.

In addition to the area of disturbance, there would be a temporary decrease in the quality of the habitat immediately adjacent to the construction sites due to increased noise levels, traffic, lights, and other human activities. Wildlife species that require isolation from such impacts may be displaced into surrounding, less disturbed areas. However, after construction has been completed, it is expected that some of the displaced species, particularly birds, would return.

The site does not support any unique wildlife habitat, heavy-use wildlife movement areas, or wildlife movement corridors, therefore construction activities under the proposed action would not result in any significant impact to wildlife habitat or movement areas.

Of the 30 Federal status species presented in Table 4.2, only 3 species were determined to have habitat requirements similar to the SVMA parcel or surrounding area or having a potential to be directly or indirectly affected by construction and operation activities at the airport. For the other 27 species, construction and operational

activities at the airport are not anticipated to affect and therefore have no significant impact on these species. Potential impacts to the remaining 3 species are addressed in further detail.

#### ***Lesser long-nosed bat***

Ongoing and proposed activities at Fort Huachuca were addressed by Fort Huachuca in a May 2002 Biological Assessment (USAG Fort Huachuca 2002). The assessment concluded that ongoing and programmed future military operations and activities at Fort Huachuca may affect and are likely to adversely affect the lesser long-nosed bat. This determination was based on the combined potential for fire, noise, habitat loss, direct mortality and human disturbance from all government operations at Fort Huachuca to affect the species.

No lesser long-nosed bat roosts are located within 1 mile of the airport. No paniculate agaves or columnar cacti are present on the 6.77-acre parcel and the bat is not anticipated to forage at the site. The site is not within or directly adjacent to a Fort Huachuca Agave Management Area. The proposed action is not anticipated to cause any habitat loss, direct mortality, or increase the likelihood of fire to affect bat populations on Fort Huachuca. Construction activities at LAAF/SVMA would occur during the daytime and therefore have no effect on the nighttime foraging patterns of the bat. No foraging habitat would be lost as a result of the proposed facility construction.

The proposed action is not anticipated to change existing noise environments or expose any bat roosts or foraging areas to any significant noise levels. The 2002 Fort Huachuca Biological Assessment concluded that potential impacts to the bat from low-level fixed-wing and rotary-wing aircraft were not anticipated to be significant (USAG Fort Huachuca 2002). No new approach or departure flight routes are proposed for LAAF/SVMA. The only reasonable potential for USBP air operations to affect the bat would be from nighttime air operations arriving or departing from the west of LAAF/SVMA. These activities may affect foraging bats in the area but would be unlikely to adversely affect the species.

Therefore, it is concluded that the proposed action may affect but is unlikely to adversely affect the lesser long-nosed bat. No significant impacts to the species are anticipated.

#### ***Bald eagle***

While bald eagles have been observed in the general area, no roosting habitat or species attractant is found at the site and the species is not anticipated to forage at LAAF/SVMA. Even if the species were to fly in the vicinity of the proposed facility, neither construction nor operation of the facility are likely to affect the bird. Alternative one is anticipated to have no effect and thus no significant impact on the bald eagle.

#### ***Canelo Hills ladies' tresses***

While ladies' tresses are known to occur in the Babocomari River upstream of Fort Huachuca, the proposed action is not anticipated to effect that population. Although the

1 action has the potential to create a short-term increase in erosion and sediment transfer  
2 in the unnamed wash along the 6.77-acre project site, the potential level of this increase  
3 and the distance between the airport and the Babocomari River is such that any  
4 potential impact would not be anticipated to affect the river. Therefore, the proposed  
5 action is anticipated to have no effect and therefore no significant impact on the Canelo  
6 Hills ladies' tresses.

7 Overall, the proposed action under alternative one is anticipated to have no significant  
8 impact on any federal status species with a potential to occur at the LAAF/SVMA. The  
9 airport is not located within any federally-designated critical habitat. No loss of a critical,  
10 yet limited resource of significant importance to a federal status species at LAAF/SVMA  
11 would result.

### 12 ***San Pedro Riparian National Conservation Area***

13 Impacts to biological resources (including threatened and endangered species and  
14 critical habitat) resulting from direct and induced employment and population growth in  
15 the Sierra Vista/Fort Huachuca area as they relate to consumptive water use and the  
16 San Pedro River is a primary concern found in most NEPA scoping actions in the area.  
17 This issue relates to a potential loss of a critical, yet limited, resource of significant  
18 importance to a federal status threatened, endangered, or candidate species and  
19 potential modification of designated critical habitat in the NCA.

20 Several changes in riparian and wetland vegetation are expected in response to  
21 declining groundwater elevation (Stromberg et al. 1996) and are apparently ongoing in  
22 certain reaches of the upper San Pedro River (ADWR 1994). Herbaceous aquatic and  
23 semi-aquatic plants found in cienegas or marshes, such as the Huachuca water umbel,  
24 are most sensitive to groundwater decline (ADWR 1994). Abundance of obligate  
25 wetland herbs declines sharply as groundwater depth drops below about 10 inches  
26 beneath the soil surface (Stromberg et al. 1996). Recent changes in riparian and  
27 wetland vegetation suggest that groundwater declines are already affecting the habitat  
28 of the Huachuca water umbel. Groundwater declines of six feet and three feet have  
29 occurred since 1987 on the San Pedro River at Contention (roughly one mile north of  
30 the Tombstone gage) and Palominas, respectively. ADWR (1994) notes that "these  
31 groundwater declines have been great enough to cause loss of obligate wetland plants  
32 and facultative wetlands."

33 Estimated annual consumptive water use would be entirely offset through water  
34 conservation projects. Therefore, Alternative One would not increase annual water  
35 consumption at Fort Huachuca or in the ROI. No impacts to the San Pedro Riparian  
36 NCA and no effect on the Huachuca water umbel, southwestern willow flycatcher,  
37 spikedace, or loach minnow or any designated critical habitat within the NCA would  
38 result because no additional consumptive water use would occur.

#### 1    **4.5.2.2        Alternative Two – New Construction on 10 Acres West of the Taxiway** 2    **“D” Extension**

3    Proposed construction activities could disturb all 10 acres of native vegetation in the  
4    area. This development could require the permanent removal of approximately 5 acres  
5    of mesquite-grass savannah habitat. The remainder of the area disturbed during  
6    construction would be revegetated as a BMP with native species and thus only  
7    temporarily disturbed. The loss of vegetation would have an adverse impact of the  
8    availability of wildlife habitat, but this impact would not be significant. No significant  
9    impact on wildlife in the ROI is anticipated.

10   According to Fort Huachuca policy, an agave survey would need to be conducted prior  
11   to the disturbance of native vegetation at the 10-acre site. This agave survey would be  
12   conducted to evaluate the potential presence of agaves and the use of the area by the  
13   lesser long-nosed bat during night time foraging.

14   Potential direct impacts to Federal status species as a result of air operations and  
15   construction activities at LAAF/SVMA are identical to those described under Alternative  
16   One. Alternative Two may affect but is unlikely to adversely affect the lesser long-nosed  
17   bat while foraging on the Agave Management Area to the west of the airport during  
18   nighttime USBP arrivals and departures from that side of the airport but would have no  
19   effect on any other Federal or state status species.

20   Estimated annual consumptive water use would be entirely offset through water  
21   conservation projects implemented in accordance with USAIC&FH Policy 119, *Fort*  
22   *Huachuca Water Use Mitigation Policy* (USAIC&FH 2002). Therefore, Alternative Two  
23   would not increase annual water consumption at Fort Huachuca or in the ROI. No  
24   impacts to the San Pedro Riparian NCA and no effect on the Huachuca water umbel,  
25   southwestern willow flycatcher, spikedace, or loach minnow or any designated critical  
26   habitat within the NCA would result because no additional consumptive water use would  
27   occur.

#### 28   **4.5.2.3        Alternative Three – Continued Leasing of LAAF Aircraft Hangar and** 29   **New Leasing of Existing SVMA Facilities**

30   No change in existing biological conditions at SVMA or LAAF would occur under this  
31   alternative. No significant impact to existing floral or faunal resources is anticipated at  
32   the airport. Potential impacts to Federal and state status species as a result of  
33   increased air operations in and out of LAAF/SVMA are identical to those described  
34   under Alternative One.

#### 35   **4.5.2.4        Alternative Four – The No Action Alternative**

36   No change in existing biological conditions would occur. No impact on biological  
37   resources is anticipated.

## **4.6 FLOODPLAINS**

### **4.6.1 EXISTING CONDITIONS**

Floodplains can be described as "lowland and relatively flat areas adjoining inland and coastal water including flood prone areas of offshore islands, including at a minimum, that area subject to a one percent or greater chance of flooding in any given year". Federal agencies are directed to take action to reduce the risk of flood loss, minimize the impact of floods on human safety, health and welfare, and restore and preserve the natural and beneficial values served by floodplains.

The LAAF/SVMA is within the Fort Huachuca boundaries and military reservations are not mapped for the National Flood Insurance Program. Therefore, no FEMA maps are available for the site. Drainage patterns indicate flows are directed towards the northeast into the Babocomari River, which is a tributary to the San Pedro River (Coffman Associates, Inc. 2001).

### **4.6.2 CONSEQUENCES**

#### **4.6.2.1 Alternative One – New Construction on 6.77 Acres East of the Taxiway "D" Extension**

Although no FEMA maps are available for the site, the area is not believed to be within a 100 year floodplain (Coffman Associates, Inc. 2001). Natural drainage patterns on the 6.77-acre site would be modified by impervious or semi-impervious buildings and parking areas. Although no facility construction plan has been completed, these facilities would likely be designed to move surface water runoff away from the buildings either into the nearby unnamed wash to the east of the site or to on-site retention/detention facilities. The unnamed wash currently receives surface water runoff from the nearby taxiways and runways and is capable of handling additional runoff from the proposed USBP facility.

The proposed action would not create any significant change in the downstream risk of flooding. The proposed action would not significantly modify any existing floodplain nor increase the risk of downstream flooding. No significant impact to local or regional floodplains or drainages is anticipated.

#### **4.6.2.2 Alternative Two – New Construction on 10 Acres West of the Taxiway "D" Extension**

Impacts are anticipated to be similar to Alternative One. The 10-acre site does not have an existing drainage channel on-site, therefore proposed USBP facilities would likely be designed to move surface water runoff away from the buildings to an on-site detention/retention facility. The proposed action would not significantly modify any existing floodplain nor increase the risk of downstream flooding. No significant impact to local or regional floodplains or drainages is anticipated.

1 **4.6.2.3 Alternative Three – Continued Leasing of LAAF Aircraft Hangar and**  
2 **New Leasing of Existing SVMA Facilities**

3 No facility construction or modification of surface water runoff patterns would occur. No  
4 change in local or regional floodplains or drainages would result. No impact to local or  
5 regional floodplains is anticipated.

6 **4.6.2.4 Alternative Four – The No Action Alternative**

7 No facility construction or modification of surface water runoff patterns would occur. No  
8 change in local or regional floodplains or drainages would result. No impact to local or  
9 regional floodplains is anticipated.

10 **4.7 AIR QUALITY**

11 **4.7.1 EXISTING CONDITIONS**

12 General ambient air quality conditions are affected by pollutants emitted at a site as well  
13 as those emitted upwind and moved by wind and air currents into the site area. The air  
14 quality for the LAAF/SVMA and the immediate vicinity is of primary concern in this EA.  
15 Given the site's remote location, upwind emissions play a minimal role in the air quality  
16 of the region. Therefore, the ROI for air quality is limited to the LAAF/SVMA, with  
17 considerations directed toward how the activities evaluated would influence downwind  
18 air quality.

19 An air pollutant is any contaminant present in the atmosphere in sufficient quantities to  
20 be detrimental to the public's well being, human health, plant or animal life, or property.  
21 Criteria air pollutants are defined as those pollutants for which the federal government  
22 has established air quality standards or criteria for outdoor concentrations in order to  
23 protect public health. The air quality of a region is evaluated on the basis of Ambient Air  
24 Quality Standards (AAQS) for five criteria air pollutants: particulate matter smaller than  
25 10 microns ( $\mu\text{m}$ ) in diameter ( $\text{PM}_{10}$ ); sulfur dioxide ( $\text{SO}_x$ ); ozone ( $\text{O}_3$ ); carbon monoxide  
26 ( $\text{CO}$ ); and nitrogen dioxide ( $\text{NO}_x$ ). The directly emitted criteria air pollutants are  $\text{CO}$ ,  
27  $\text{NO}_x$ ,  $\text{SO}_x$  and suspended particulate matter ( $\text{PM}_{10}$ ). Ozone is a secondary air pollutant  
28 resulting from photochemical reactions involving nitrogen oxides ( $\text{NO}_x$ ) and reactive  
29 organic gases (ROG).

30 In 1990, the Arizona Department of Environmental Quality (ADEQ) adopted the National  
31 AAQS as the Arizona AAQS. The Arizona State Implementation Plan (SIP), which is a  
32 detailed description of the programs Arizona uses to carry out its responsibilities under  
33 the Clean Air Act, includes the Arizona Air Pollution Control Laws and the Arizona Air  
34 Pollution Control Regulations under Arizona Administrative Rules and Regulations. The  
35 State of Arizona has adopted both National Primary and Secondary Standards for  
36 criteria air pollutants (Table 4.3).

37 Air quality standards and regulations are expressed either as pollutant concentration or  
38 as the annual emission rate. Concentrations are expressed in either micrograms per

cubic meter ( $\mu\text{g}/\text{m}^3$ ) or parts per million (ppm) by volume. National Primary Standards define the levels of air quality necessary to protect the public health and welfare from known or anticipated adverse effects of a pollutant with an adequate margin of safety.

**Table 4.3 National Primary and Secondary Ambient Air Quality Standards**

POLLUTANT	AVERAGING TIME	STANDARDS	
		PRIMARY	SECONDARY
Ozone	1 Hour	0.12 ppm; ( $235 \mu\text{g}/\text{m}^3$ )	Same as primary standard
Carbon Monoxide	8 Hours	9 ppm; ( $10 \mu\text{g}/\text{m}^3$ )	-
	1 Hour	35 ppm; ( $40 \mu\text{g}/\text{m}^3$ )	-
Nitrogen Dioxide	Annual	0.053 ppm; ( $100 \mu\text{g}/\text{m}^3$ )	Same as primary standard
Sulfur Dioxide	Annual	0.03 ppm; ( $80 \mu\text{g}/\text{m}^3$ )	-
	24 Hours	0.14 ppm; ( $365 \mu\text{g}/\text{m}^3$ )	-
	3 Hours	-	0.50 ppm; ( $1300 \mu\text{g}/\text{m}^3$ )
Particulate Suspended Matter ( $\text{PM}_{10}$ )	24 Hours	$150 \mu\text{g}/\text{m}^3$	Same as primary standard
	Annual Arithmetic Mean	$50 \mu\text{g}/\text{m}^3$	Same as primary standard
Lead	Calendar Quarter	$1.5 \mu\text{g}/\text{m}^3$	Same as primary standard

Source: 40 CFR Part 50

This section identifies current ambient air quality conditions and policies affecting the area surrounding LAAF/SVMA, located in the Southeast Arizona Air Quality Control region. This region encompasses the counties of Cochise, Graham, and Santa Cruz. Local air quality standards fall under the jurisdiction of the U.S. Environmental Protection Agency (EPA) and are regulated by the National AAQS as directed by the Clean Air Act of 1971 and the ADEQ.

#### 4.7.1.1 Ambient Air Quality

The superior air quality in the vicinity of Sierra Vista is related to favorable wind patterns and a lack of typical major sources of air pollution such as heavy industry and fossil fuel power plants. Sources of air pollutants in the area include aircraft (military and private), private and military vehicles, and gas heating emissions. Because of these favorable conditions, Sierra Vista is within an area of attainment for air quality criteria pollutants.

Sierra Vista monitoring stations provide a characterization of the air quality. Available monitoring data indicate that air quality in the vicinity of SVMA meets National AAQS for criteria air pollutants and has met the standards since the inception of monitoring programs. Monitoring programs for CO and O<sub>3</sub> were conducted in Sierra Vista between 1977 and 1983 by the ADEQ. The routine CO and O<sub>3</sub> monitoring program in Sierra Vista ended in 1984 with the justification that CO and O<sub>3</sub> concentrations would continue to decrease through year 2000. CO results primarily from automobile emissions and O<sub>3</sub> from photochemical reactions involving hydrocarbons.

ADEQ also monitored total suspended particulate (TSP) in Sierra Vista between 1974 and 1988. The TSP measurements include particles in the PM<sub>10</sub> size range and PM<sub>10</sub> levels can be calculated from TSP values. The Arizona Office of Air Quality Control monitors PM<sub>10</sub> because particles in the PM<sub>10</sub> size range are respirable, thus influencing

human health. Calculated PM<sub>10</sub> levels for the Sierra Vista area were well below 50 µg/m<sup>3</sup>, the compliance standard.

No data are available on sulfur and nitrogen oxides. Vehicle engines and industrial processes are the major sources of these pollutants. Potential industrial sources of sulfur dioxides in the region are mainly copper smelters. Sources of these pollutants at SVMA are vehicle and aircraft engines, diesel generators, boilers, and other heating equipment. Fuels are typically low in sulfur and would not contribute measurable amounts of sulfur and nitrogen dioxides to the region.

#### **4.7.2 CONSEQUENCES**

Potential impacts on air quality can be divided into short-term and long-term. Short-term impacts are usually associated with construction and grading activities, and long-term impacts are typically associated with build-out conditions. Most long-term emissions would be due to increased aircraft use. Reactive organic gas (ROG) emissions are associated with storing and dispensing fuel used in the operation of project-related activities.

A determination of significant impact on air quality could result if any of the following conditions are anticipated to occur:

- Activities would release criteria pollutants that exceed the federal primary and secondary standards for pollutants adopted by the State of Arizona.
- Activities are not in conformity with Section 176 of the Federal Clean Air Act for federal actions.

On November 1993, the EPA published the General Conformity Final Rule in the Federal Register (58 FR 63214). The purpose of the rule, "*Determining Conformity of General Federal Actions to State or Federal Implementation Plans*" is to ensure that all Federal actions conform to the SIP applicable to the project site. The applicable regulations are cited in 40 CFR 6, 51 Subpart W, and 93. A "federal action" is defined as any activity engaged in by a Federal agency, department, or other entity licensed, permitted, funded, or otherwise supported by a federal entity. "Conformity to SIP" is defined as conformity to a SIP's purpose of eliminating or reducing the severity and number of violations of the National AAQS and achieving expeditious attainment of such standards.

As a result of the General Conformity Rule, federal actions must be evaluated to assess whether emissions associated with the action will interfere with an area's air quality improvement plan. The general conformity rule applies only to federal actions that may emit a criteria pollutant for which an area has been designated as non-attainment or maintenance.

#### 4.7.2.1 Alternative One – New Construction on 6.77 Acres East of the Taxiway “D” Extension

A temporary increase in emissions would occur due to equipment operation during construction of proposed USBP facilities. Pollutants would include exhaust from heavy construction equipment and ground vehicles. Fugitive dust would also increase during construction activities, although it would be greatly reduced by dust suppression activities on-site. Dust emissions would consist primarily of large particles that generally settle on nearby surfaces, rather than becoming airborne for any great distance.

Construction operations would create a minor source of temporary dust emissions affecting local air quality. The quantity of dust emissions from proposed construction operations is estimated using the procedure ( $E = 1.2$  tons/acre/month of activity) as presented in *EPA Guidance Document AP-42 (Ch. 13.2.3.3)*. It is estimated that the proposed construction activity could disturb a maximum of 7 acres for a period of one month. Based on this level of activity, the contribution of temporary dust emissions to the local ambient air is approximately 8.4 tons. However, with the use of dust control measures (wet suppression) during construction, the contribution would be significantly reduced.

In addition to dust emissions, emissions of other criteria pollutants from the construction equipment, such as ROG, were also estimated using emission factors for fugitive sources (Table 4.4).

**Table 4.4 Estimated Emissions from Construction Activities**

Equipment Type (number)	Anticipated Use	CO	ROG	NOx	SOx	PM10
5-ton dump truck (2)	200 miles	22.88 lbs.	7.04 lbs.	78.56 lbs.	7.36 lbs.	6.56 lbs.
D-7 Bulldozer (1)	40 hours	27 lbs.	6 lbs.	68 lbs.	14 lbs.	5.6 lbs.
Front-end loader (1)	40 hours	54 lbs.	12 lbs.	136 lbs.	28 lbs.	11.2 lbs.
Grader (1)	40 hours	54 lbs.	12 lbs.	136 lbs.	28 lbs.	11.2 lbs.
Const. Worker Vehicle (10)	200 miles	0.29 lbs.	0.01 lbs.	0.03 lbs.	0.0 lbs.	0.0 lbs.
<b>TOTAL (lbs)</b>		<b>158.17</b>	<b>37.05</b>	<b>418.59</b>	<b>77.36</b>	<b>34.56</b>
<b>TOTAL (tons)</b>		<b>0.08</b>	<b>0.02</b>	<b>0.21</b>	<b>0.04</b>	<b>0.02</b>

Source: Vernadero Consulting, 2002b

Under the proposed action, the annual number of USBP operations at LAAF/SVMA could increase by approximately 150%. This increase would represent less than 4% of current annual operations at the airport. The majority of concentrated pollution emissions occur during ground activities, take off, and landing. Pollutants emitted at altitude by flying aircraft are diluted and dispersed prior to reaching the ground and are well below significant levels. Even with proposed increases in USBP air operations activity, the

1 amount of pollution emitted by these aircraft will not cause the ambient air quality to  
2 exceed the federal or state standards for air quality, nor will they result in a violation of  
3 standards or requirements established in the SIP. Therefore, due to only a minor increase  
4 in USBP air operations at LAAF/SVMA, the proposed action is not anticipated to result in a  
5 significant impact on air quality.

6 In accordance with the General Conformity Rule (40 C.F.R. §§ 51.850-860 and 40 C.F.R.  
7 §§ 93.150-160), a federal agency responsible for an action must demonstrate that the air  
8 emissions associated with the action are in conformity with the SIP for federal  
9 nonattainment pollutants. Since the area is within an attainment area for all criteria  
10 pollutants, the activities associated with the proposed action will not result in a violation of  
11 the General Conformity Rule. In addition, the total emission from these activities would  
12 clearly not exceed 50 ton/year pollutant-specific *de minimis* threshold values for all criteria  
13 pollutants and less than 10% of the total regional emissions budget for the air basin.  
14 Likewise, the addition of eight USBP personnel and requisite commutes to and from work  
15 would be clearly negligible in the local or regional context. Further procedural requirements  
16 under the General Conformity Rule are not applicable to the proposed action because it  
17 occurs entirely within a NAAQS attainment area.

#### 18 **4.7.2.2 Alternative Two – New Construction on 10 Acres West of the Taxiway** 19 **“D” Extension**

20 Potential impacts are identical to those described for Alternative One. No significant  
21 impact to air quality is anticipated.

#### 22 **4.7.2.3 Alternative Three – Continued Leasing of LAAF Aircraft Hangar and** 23 **New Leasing of Existing SVMA Facilities**

24 Temporary impacts from construction would not occur under this alternative. Potential  
25 impacts resulting from operational activities would be the same as under Alternative  
26 One and less than significant.

#### 27 **4.7.2.4 Alternative Four – The No Action Alternative**

28 No change in existing ambient air quality noise levels would occur and no new pollution  
29 sources would be introduced. No impact to air quality is anticipated.

### 30 **4.8 NOISE**

#### 31 **4.8.1 EXISTING CONDITIONS**

32 Noise is defined as unwanted sound that interferes with normal human activities. The  
33 degree to which noise will disrupt an area is dependent on the perception of the people  
34 living in the affected area. By definition, noise is unwanted sound; when sound  
35 interrupts daily activities such as sleeping or conversation it becomes noise. Typically,

1 noise is measured as a nuisance; the more the noise interferes with daily activities, the  
2 greater the level of nuisance. If noise levels cause physical damage to hearing or  
3 psychological harm, noise is considered a health hazard. The ROI for noise is limited to  
4 the parcels where facilities could be built and adjacent environs that may be exposed to  
5 noise generated by USBP air operations activities.

6 A decibel (dB) is a unit for expressing the relative intensity of sound on a scale from  
7 zero for the average least perceptible sound to about 130 for the average pain level.  
8 Figure 4.15 shows a comparison of different noise sources and associated magnitudes.  
9 Because the human ear is more sensitive to certain ranges of the sound spectrum, a  
10 weighted scale has been developed to more accurately measure human perception of  
11 sound. This measurement is called A-weighted decibels (dBA). For the purposes of  
12 measuring annoyance, noise measurements are frequently taken over a period of time  
13 (for example, every minute for an hour) and the values are averaged. This value is  
14 called an equivalent noise value, or  $L_{eq}$  and allows the steady source of noise (such as  
15 a busy road) to be compared to established state and federal noise criteria. Humans  
16 are also more sensitive to noise at different times of the day. To reflect this sensitivity, a  
17 day-night decibel measurement, or  $L_{dn}$ , similar to an  $L_{eq}$  value, measures the average  
18 ambient noise and adds 10 dB to all readings taken between 10 p.m. and 7 a.m. A  
19 maximum noise reading, or  $L_{max}$ , is typically used to describe noises that occur  
20 infrequently.

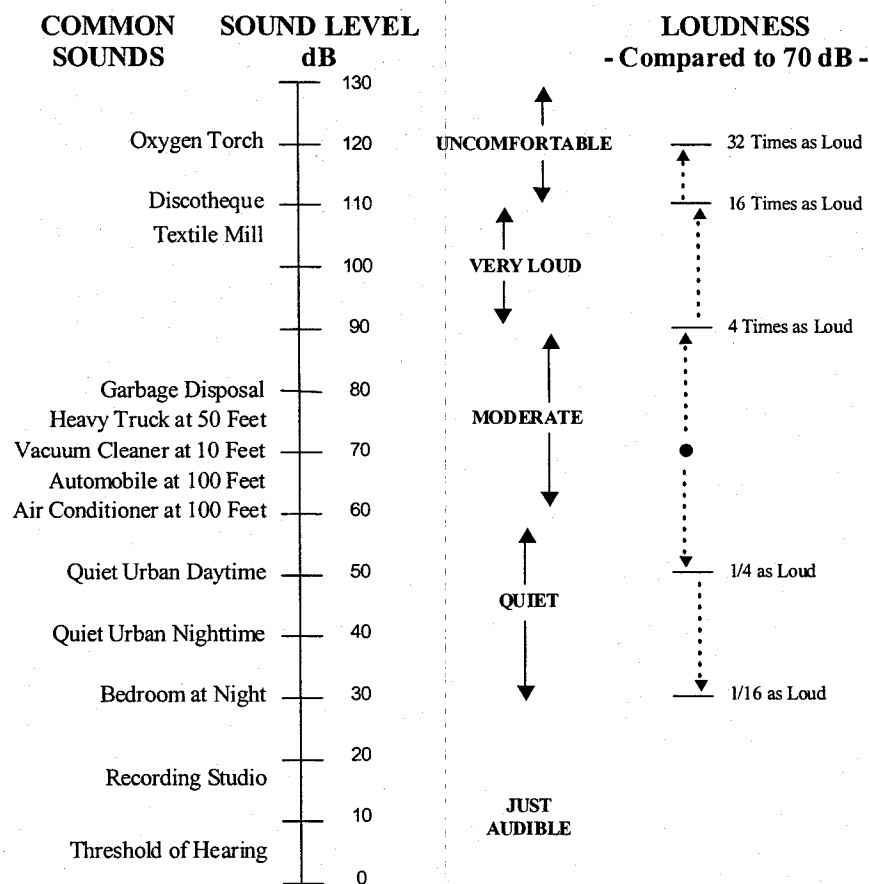
21 The Noise Control Act of 1972 was created to ensure that programs are developed to  
22 promote an environment that is free from noise that jeopardizes public health or welfare.  
23 The EPA is responsible for administering and implementing this act and has set a goal  
24 of achieving noise levels of 55 dB  $L_{dn}$  or less for residential areas; however, the 55 dB  
25  $L_{dn}$  goal does not consider the costs of attainment. The Federal Interagency Committee  
26 on Noise (FICUN) has taken economic feasibility into consideration in recommending a  
27 threshold for residential land use compatibility of 65 dB  $L_{dn}$  (FICUN 1980).

28 Aviation noise within the ROI is generated by commercial, general aviation, and military  
29 activities. There are no major general aviation airports within the region, and noise  
30 generated by either commercial or general aviation traffic is low. Maintained airports  
31 within the area include LAAF/SVMA, Cochise College, Douglas Municipal, Bisbee-  
32 Douglas International, and Sells. None of these airports is served by a major airline;  
33 however, regional air service is available to SVMA from Mesa Airlines. General aviation  
34 and civil use account for the majority of aircraft using these airports. Military Operating  
35 Areas (MOAs) have been specifically designated over regions with little to no population  
36 to minimize human exposure to noise and limit safety risks. Noise associated with  
37 training activities within regional MOAs has resulted in complaints from rural residents in  
38 southern Arizona in the past, particularly in the Tohono O'odham Indian Reservation.  
39 As a result, flights over the reservation were addressed in a 1988 EIS, and flights in the  
40 vicinity of settlements on the reservation are now restricted (ENRD 2000).

41 Aircraft that regularly operate out of LAAF/SVMA include C-130, A-10, F-16, UH-60,  
42 RC-12, OH-58, AH-64, UH-1, commercial aircraft, and small planes. The noise

generated by both weapons use and aircraft operations only exceeds 65 dB  $L_{dn}$  over undeveloped areas within Fort Huachuca (DEHE 1997).

A study addressing aircraft (both fixed wing and rotary) noise in and out of SVMA/LAAF was conducted for the preparation of the *Environmental Assessment for the Transfer and Development of 203 Acres of Property Adjacent to Sierra Vista Municipal Airport* (Coffman Associates, Inc. 2001). This study used the Integrated Noise Mode (INM), an FAA approved method, for estimating noise contours. The noise estimates derived for the proposed action of the 203-acre EA included the proposed increases in USBP operations that are being assessed in this document. The output data from the INM were provided in annual average noise contours in  $L_{dn}$ . FAA Order 5050.44 and FICUN recognize the 65  $L_{dn}$  contour as the threshold of significant impact and areas that occur outside of the 65  $L_{dn}$  contour are considered compatible with airport noise (Coffman Associates, Inc. 2002).



**Figure 4.15 Comparison of Noise Sources**

Figure 4.16 presents projected 2005 noise exposure contours for LAAF/SVMA (from Coffman Associates, Inc. 2002). The shape and size of the noise contours are primarily associated with military aircraft used at the airport and the number of military

operations. The 75, 70, and 65  $L_{dn}$  contours are completely within the boundaries of Fort Huachuca. The 65 and 70  $L_{dn}$  noise contours extend over SR 90 but do not go over the main post or over residential areas of Sierra Vista. Approximately 0.98 square miles were estimated to occur within the 75  $L_{dn}$  contour, 2.54 square miles within the 70  $L_{dn}$  contour, and 5.02 square miles within the 65  $L_{dn}$  contour. These contours represent projected 2005 conditions under the 100% Developed Alternative of the *Environmental Assessment for the Transfer and Development of 203 Acres of Property Adjacent to Sierra Vista Municipal Airport* (see Coffman Associates, Inc. 2001). The 100% Developed Alternative includes the proposed increase in USBP air operations that are part of this proposed action. No residential development is currently anticipated within these projected noise contours.

#### 4.8.2 CONSEQUENCES

Potential impacts from noise can be divided into short-term and long-term. Short-term impacts are usually associated with construction and grading activities, where long-term impacts are associated with operational activities. The majority of the long-term noise level increases will be attributable to increased aircraft use in the ROI. Criteria for the assessment of noise impacts are based on established Land Use Compatibility Guidelines established by the FICUN 1980, *Guidelines for Considering Noise in Land Use Planning and Control* and the Federal Interagency Committee on Noise 1992: *Federal Agency Review of Selected Airport Noise Analysis Issues*. The signatories of these sources of criteria include DOD, Department of Housing and Urban Development (HUD), EPA, FAA, and Veterans Administration. These agencies are in substantial agreement concerning the levels and characteristics of noise from different sources on a wide variety of human activity and land use. A determination of significant impact on the human environment as a result of noise could result if any of the following conditions are anticipated to occur:

- Activities result in frequent noises at very high levels (e.g., blasts with C-weighted sound exposure levels in excess of 110 dB) in areas not already designated and covered under previous environmental regulatory documentation for such noise events.
- Activity-generated noise emissions expose sensitive off-site receptors to noise levels in excess of the 65  $L_{dn}$ .

Potential impacts to wildlife as a result of noise are discussed in Section 4.5.2 and not repeated here.

##### 4.8.2.1 Alternative One – New Construction on 6.77 Acres East of The Taxiway “D” Extension

Construction noise levels typically range from 85-90 dBA at a distance of 50 feet for short periods during site preparation and grading activities (EPA 1971). Table 4.5 presents the anticipated noise from this construction at varying distances.

Construction noise is usually considered a point source, with attenuation at a rate of 6 dB per doubling of distance. Based on 7 hours of continuous construction activity per day (including one hour of down time), the distance to the 65 dBA  $L_{dn}$  noise contour is approximately 450 feet. The 65 dBA  $L_{dn}$  contour is commonly used for planning purposes to identify potential impacts to sensitive receptors. Land uses associated with sensitive receptors often include residential dwellings, mobile homes, hotels, motels, hospitals, nursing homes, education facilities, and libraries. Because of the absence of any noise-sensitive human receptors within 1000 feet of the site, noise generated during construction activities is anticipated to be temporary and less than significant. After the completion of the new facilities, traffic may increase slightly along Airport Road. However, the number of vehicles will be small and will not raise ambient noise to or above significant levels.

Potential noise impacts associated with increased USBP aircraft activity at LAAF/SVMA were incorporated within the 2005 noise contour projections prepared for the 203-acre land exchange EA prepared by Coffman Associates, Inc. (2001) and shown in Figure 4.18. There are no residences, housing units, or noise sensitive facilities within the 65  $L_{dn}$  or greater noise contours for projected 2005 conditions (Coffman Associates, Inc. 2001). Therefore, activity-generated noise emissions are not anticipated to expose sensitive off-site receptors to noise levels in excess of the 65  $L_{dn}$ . Overall, impacts to the human environment resulting from noise are anticipated to be temporary and/or less than significant.

**Table 4.5 Anticipated Noise Levels of Construction Heavy Equipment at Varying Distances**

Noise Level (dBA)	Distance from Construction Site (In feet)
90	50
84	100
78	200
72	400
66	800
65	890
60	1,600

Based on an attenuation of 6 dBA per doubling of the distance for point source noise emissions

#### **4.8.2.2 Alternative Two – New Construction on 10 Acres West of the Taxiway “D” Extension**

Potential impacts are identical to those described for Alternative One. No significant impact as a result of noise is anticipated.

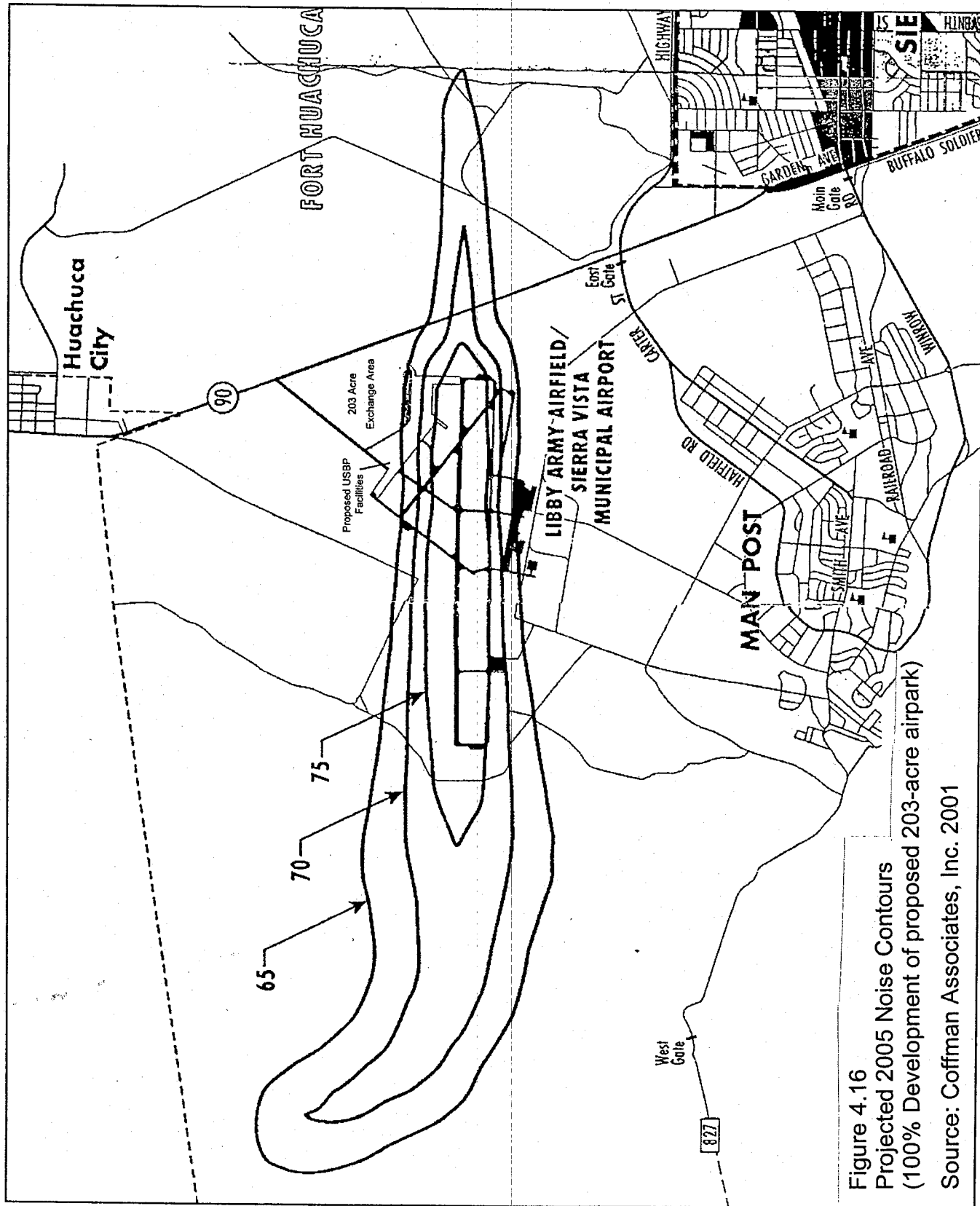


Figure 4.16  
 Projected 2005 Noise Contours  
 (100% Development of proposed 203-acre airport)  
 Source: Coffman Associates, Inc. 2001

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1 **4.8.2.3 Alternative Three – Continued Leasing of LAAF Aircraft Hangar and**  
2 **New Leasing of Existing SVMA Facilities**

3 Temporary impacts from construction activities would not occur under this alternative.  
4 Potential impacts related to increased air operations at LAAF/SVMA are identical to  
5 those identified under Alternative One and not anticipated to be significant. No  
6 significant impact as a result of noise is anticipated.

7 **4.8.2.4 Alternative Four – The No Action Alternative**

8 No change in existing noise levels would occur. No impact as a result of noise is  
9 anticipated.

10 **4.9 CULTURAL RESOURCES**

11 **4.9.1 EXISTING CONDITIONS**

12 This section presents the existing historic or cultural resource conditions. The Area of  
13 Potential Effect (APE) for historic and cultural resources is the geographic area within  
14 which a project may indirectly or directly cause changes in the character or use of  
15 historic properties, if such historic properties exist.

16 Fort Huachuca holds a prominent position in the cultural history of the southwestern  
17 United States. Cultural resources within and near the installation boundaries  
18 encompass sites spanning approximately 12,000 years, from the Paleoindian Period to  
19 the present. In addition to the prehistoric and protohistoric cultures listed for the Middle  
20 San Pedro Valley, Fort Huachuca holds special historic significance for the Apache,  
21 Apache Scouts, and African American "buffalo soldiers." Many cultural sites at Fort  
22 Huachuca have high scientific value and provide excellent opportunities for public  
23 education and interpretation.

24 The San Pedro River Valley shows evidence of long-term prehistoric human activity and  
25 occupation, beginning during the Paleoindian Period. The archaeological record of the  
26 area also reflects the clash between the Apache, the Sobaipuri, and the Spanish that  
27 resulted in the expulsion of the latter two groups from the San Pedro Valley in the late  
28 18<sup>th</sup> Century. Fort Huachuca itself was established in 1877 as one of a series of military  
29 posts designed to control and defeat the Apache in the last chapter of their centuries-  
30 long competition with established Native American communities and with succeeding  
31 waves of settlers of European descent (Statistical Research 1995).

32 A Class I inventory of the two parcels, which conforms to all applicable professional  
33 standards and policies including the *Secretary of the Interior's Standards and*  
34 *Guidelines for Archeology and Historic Preservation*, was conducted by Entranco, Inc. in  
35 July 2002 (Appendix B). The inventory consisted of a record search and site files check  
36 at the Arizona State Museum, the Arizona State Historic Preservation Office, and the  
37 Bureau of Land Management to identify previous surveys and previously recorded  
38 cultural resource sites within and surrounding the project area. Five previous surveys

1 and two cultural resource sites were identified within a one-mile radius of the project  
2 areas. One survey encompassed a portion of both the 6.77-acre and 10-acre parcels  
3 (Entranco, Inc. 2002).

4 Of the two cultural resource sites, site AZ EE:7:235 is approximately 0.85 miles east of  
5 the two parcels and site AZ EE:7:176 is 0.75 miles from the two parcels. AZ EE:7:235  
6 consists of a trash dump and lithic scatter that dates to the early 1900s and prehistoric  
7 times and is unevaluated. AZ EE7:176 consists of a historic road (SR 90) and dates to  
8 1940-1947. This latter site was determined not eligible for listing on the National  
9 Register of Historic Places.

10 In the winter of 1998-1999, John Murray, former Fort Huachuca Post Archeologist,  
11 completed a records and literature search, and an archeological resource survey of the  
12 203-acre project site adjacent to the 6.77 and 10-acre parcels (Coffman Associates, Inc.  
13 2001). The records and literature search revealed that the adjacent 203-acre land  
14 transfer study area had been previously surveyed for archeological resources in 1986-  
15 1987 as part of a proposed land conveyance between the city of Sierra Vista and Fort  
16 Huachuca. The results of the 1986-1987 survey were negative.

17 The results of a pedestrian survey at the same site was conducted in 1998-1999 by the  
18 same former Post Archeologist, with the assistance of an archeological volunteer, were  
19 also negative (Coffman Associates, Inc. 2001). No significant cultural resources were  
20 reported within the adjacent 203-acre study area, however there are no records to  
21 determine whether the two parcels under analysis here were included in the 1998-99  
22 survey.

#### 23 **4.9.2 CONSEQUENCES**

24 Potential impacts to historic or cultural resources could result from ground-disturbing  
25 activities such as grading and excavation for new construction. A determination of  
26 significant impact on historic or cultural resources could result if any of the following  
27 conditions are anticipated to occur:

- 28 • Any adverse effect on properties listed on, or determined eligible for, the National  
29 Register of Historic Places.
- 30 • Proposed construction activities were to disturb or damage cultural resources  
31 and/or cultural resource sites.

##### 32 **4.9.2.1 Alternative One – New Construction on 6.77 Acres East of the** 33 **Taxiway “D” Extension**

34 The 6.77-acre parcel is located on property managed by the city of Sierra Vista. One  
35 previous survey encompassed the majority of the 6.77-acre parcel (Entranco, Inc.  
36 2002). No resources were identified during that survey. Although it is not known if the  
37 area was included in the 1998-99 survey by the Fort Huachuca Post Archaeologist, the  
38 entire area has been disturbed by previous soil stockpiling and surface disturbance.  
39 Approximately eight (8) feet of soil has been deposited on this entire site and the

1 surface of the stockpile graded and used as a heavy equipment staging area in the  
2 recent past.

3 Because of the level of disturbance at the site and previous investigations at the site  
4 and in the adjacent areas, it is concluded that the proposed action will have no adverse  
5 effect on properties listed on, or determined eligible for, the National Register of Historic  
6 Places, and will not disturb or damage cultural resources and/or cultural resource sites.  
7 Correspondence with affected Native American tribes has occurred and a concurrence  
8 with this determination has been received from the Arizona SHPO (Appendix B). If any  
9 sites of archaeological significance are discovered during earth-moving activities  
10 associated with construction, all activity will stop immediately pending a site review by a  
11 qualified archaeologist. No significant impact to historic or cultural resources is  
12 anticipated.

#### 13 **4.9.2.2 Alternative Two – New Construction on 10 Acres West of the Taxiway** 14 **“D” Extension**

15 The 10-acre parcel is managed by the U.S. Army Garrison, Fort Huachuca. One  
16 previous survey encompassed a portion of the 10 acre parcel (Entranco, Inc. 2002) but  
17 and the entire site is undisturbed native vegetation. Prior to any ground disturbing  
18 activities at the site, a Class III pedestrian survey would need to be conducted under the  
19 direction of the Post Archaeologist. If any potential sites are discovered, consultation  
20 with the Arizona SHPO and all relevant Native American tribes would need to be  
21 conducted prior to the start of any ground disturbing activity.

22 Based on the potential for cultural resources to exist on the 10-acre site, it is concluded  
23 that the proposed action may have an adverse effect on currently unknown cultural  
24 resources and/or cultural resource sites. However, a significant impact to cultural  
25 resources is not anticipated in the event that a Class III pedestrian survey is conducted  
26 on the site and coordination with the Arizona SHPO and affected Native American tribes  
27 precede any ground disturbing activity.

#### 28 **4.9.2.3 Alternative Three – Continued Leasing of LAAF Aircraft Hangar and** 29 **New Leasing of Existing SVMA Facilities**

30 The continued use of the LAAF Hangar would not create a potential to affect historic or  
31 cultural resources of the ROI. No impact on historic or cultural resources is anticipated.

#### 32 **4.9.2.4 Alternative Four – The No Action Alternative**

33 No impact on historic or cultural resources is anticipated.

## 4.10 INFRASTRUCTURE AVAILABLE

### 4.10.1 EXISTING CONDITIONS

This section describes the available infrastructure, including potable water, wastewater treatment, electric power supply, natural gas, fuel, and solid waste disposal that may be affected by the proposed action and alternatives. LAAF/SVMA comprises the ROI for these services and resources.

Potable water at SVMA is provided by an on-site, city-owned well. The well, pumphouse, and 60,000-gallon storage tank are located on the east side of the hangars, north of the FBO hangar. An additional well is located north of the terminal parking lot. No water storage is associated with this particular well. The water supply system for the civilian side of the airfield is independent of the water supply system for Fort Huachuca (Coffman Associates, Inc. 2001). There are 8 water supply wells servicing potable water for Fort Huachuca. These wells are considered municipal water supply wells with well depths between 710 and 1230 feet. Two of the wells (800 gpm pump capacity) are located on the East Range and six wells (500-700 gpm pump capacity) are located on post between the main gate and the east gate.

Wastewater treatment on SVMA is currently provided through individual sewage disposal systems. Within the city's 208 Water Quality Management Boundary, wastewater treatment is provided at two wastewater treatment plants. With construction of the new treatment/recharge facility, total capacity will be 2.8 MGD, growing to 4 MGD (Coffman Associates, Inc. 2001). The new facility was sized based on existing and future growth projected for the Sierra Vista 208 Water Quality Management boundary. LAAF/SVMA is not within the City's existing wastewater service and planning area; however, it is possible to either revise the boundaries of the 208 area, incorporating the airport; or provide on-site wastewater treatment; or connect to the Fort's wastewater treatment facility (WWTF). Fort Huachuca operates one wastewater treatment plant. Wastewater from LAAF is treated on post at this WWTF.

Electrical power to the SVMA is provided by Sulphur Springs Valley Electrical Cooperative. The primary electrical power at LAAF is obtained from a Tucson Electric Power Company (TEP) 138/46/14 kV Substation, located 800 ft due west of Greely Hall on Fort Huachuca.

Southwest Gas provides natural gas to the SVMA complex through a 2-inch gas line constructed along the southern side of the airport access road (Coffman Associates, Inc. 2001). Natural Gas is supplied to LAAF by Southwest Gas through two high pressure mains (400 psi) which are owned by El Paso Natural Gas Company.

Fuel storage at SVMA consists of four 15,000-gallon above ground fuel tanks, for a total storage capacity of 60,000-gallons. Two of the 15,000-gallon tanks contain Jet A fuel and the remaining two 15,000-gallon tanks contain 100LL Avgas. The city distributes the fuel using two trucks: a 3,200-gallon capacity truck containing Jet A and 1,200-gallon capacity truck containing Avgas. Additional trucks are used during the local

1 forest fire season to support U.S. Forest Service operations (Coffman Associates, Inc.  
2 2001).

3 The city of Sierra Vista provides solid waste disposal services for SVMA. Solid waste is  
4 taken to an enclosed transfer station located approximately 8.5 miles east of the airfield  
5 for transport to the County landfill (Coffman Associates, Inc. 2001).

#### 6 **4.10.2 CONSEQUENCES**

7 Potential impacts on public services, utilities or energy could be determined significant if  
8 any of the following conditions are anticipated to occur:

- 9 • A resource exceeds its present and/or future capacity to serve.
- 10 • A long-term interruption to, or interference of, service.
- 11 • A significant increase in annual energy consumption or peak potential loading is  
12 calculated to exceed the capacity of the transmission lines and transformers.

##### 13 **4.10.2.1 Alternative One – New Construction on 6.77 Acres East of The** 14 **Taxiway “D” Extension**

15 The only potential for the proposed action to cause a long-term interruption to, or  
16 interference of, utility service, would be the result of accidental damage to underground  
17 utility lines during construction activities. City of Sierra Vista construction guidelines  
18 require existing utilities to be clearly marked and avoided (if possible) during any ground  
19 disturbing activity. Accidental damage to underground utility lines during construction  
20 activities may temporarily impact the provision of utilities, but those potential impacts will  
21 not be significant on the human environment. There would be no significant increase in  
22 the potential for accidental damage due to construction activities associated with the  
23 proposed action.

24 No other activities are anticipated to significantly impact the human environment  
25 regarding the provision of public services, utilities, or energy consumption. All utilities at  
26 SVMA are well under maximum capacity (as previously described) and the proposed  
27 action will not cause any utility to exceed its present and/or future capacity to serve.

##### 28 **4.10.2.2 Alternative Two – New Construction on 10 Acres West of the Taxiway** 29 **“D” Extension**

30 Potential impacts are identical to those described for Alternative One. No significant  
31 impact to public services or utilities is anticipated.

##### 32 **4.10.2.3 Alternative Three – Continued Leasing of LAAF Aircraft Hangar and** 33 **New Leasing of Existing SVMA Facilities**

34 No change in existing public services or utilities would occur. No impact on public  
35 services or utilities is anticipated.

#### 1    **4.10.2.4        Alternative Four – The No Action Alternative**

2    No change in existing public services or utilities would occur. No impact on public  
3    services or utilities is anticipated.

### 4    **4.11        TRAFFIC AND TRANSPORTATION**

#### 5    **4.11.1        EXISTING CONDITIONS**

6    Two areas of transportation are considered in this section: ground resources and  
7    aviation resources. The ROI for ground transportation includes the roads used to  
8    access LAAF/SVMA. The ROI for aviation includes four restricted areas in the vicinity:  
9    R-2303A, R-2303B, R-2303C, and R-2312. This baseline information will be used as a  
10   point of comparison when evaluating traffic (both ground and aviation) impacts that may  
11   be caused by the proposed action.

##### 12   **4.11.1.1        Ground Traffic**

13   State Route (SR) 90, a four-lane road, runs along the eastern side of LAAF/SVMA.  
14   From SR 90, the SVMA terminal building and parking areas are accessed using Airport  
15   Drive. Airport Drive terminates prior to the two parcels being considered for  
16   development. Airport Drive would need to be extended if the 6.77-acre parcel is  
17   developed. To extend Airport Drive to the 6.77-acre parcel, it would be necessary to  
18   cross an existing drainage channel. The Sierra Vista Public Transit (bus) does not  
19   currently provide service to the airport; however, transportation can be obtained using  
20   taxis and hotel shuttles (Coffman Associates, Inc. 2001).

21   Access to LAAF is from SR 90 through the roadway network inside Fort Huachuca.  
22   Most traffic to LAAF follows SR 90 through the East Gate along Hatfield Street and  
23   either Brainard Road or Hunt Street over to Arizona Street where the entrance to LAAF  
24   is located. This network consists of primary and secondary collector streets, and local  
25   or residential streets. Roadways that carry large volumes of traffic (6,000 to 10,000  
26   vehicles per day) are classified as primary collector streets. These roadways have  
27   cross-sections of up to 4 lanes with a median, shoulders, and sidewalks. Primary  
28   collector streets along this route include Hatfield Street and Brainard Road.

29   Roadways that connect residential or commercial areas to primary collector streets are  
30   classified as secondary collector streets. Secondary collector streets carry less traffic  
31   (between 2,000 to 8,000 vehicles per day) and are built to lesser design standards than  
32   primary collectors. Secondary collector streets have cross-sections of up to four lanes  
33   with a median and sidewalks. Arizona Street is classified as a secondary collector. All  
34   other roads on post, including Hunt Street, are classified as residential or local streets.

35   There are no trucking companies located in the city of Sierra Vista, however, several  
36   trucking companies have hub facilities in the Tucson metropolitan area and provide  
37   regular service throughout the area. There is no rail service to the airport. The nearest

passenger rail service is found approximately 25 miles north at the Benson Amtrak Station (Coffman Associates, Inc. 2001).

#### 4.11.1.2 Air Traffic

Approaches to LAAF/SVMA are considered Class D Airspace since the facility contains a manned operating control tower. The airport's airspace includes a horizontal radius of 4.3 statute miles of the airport, extending from the surface up to 7,200 feet above mean surface level (MSL). Aircraft are not allowed to enter the airspace until the ATC tower is contacted for clearance to do so. During the time the ATC tower is closed, the airspace reverts to Class G, or uncontrolled airspace.

Restricted areas contain airspace identified by an area on the surface of the earth within which the flight of aircraft is subject to restrictions. If the restricted area is active, the ATC facility having jurisdiction over the airspace needs to authorize clearances to aircraft that cannot avoid the restricted area, unless the aircraft is on a previously approved altitude reservation mission or is part of an activity within the restricted area (Coffman Associates, Inc. 1995). If the restricted area is not active and has been released to the controlling agency (FAA), the ATC facility will allow aircraft to transition through the airspace without issuing special clearances. Total LAAF radar and tower traffic counts for 2001 are presented in Table 4.6.

**Table 4.6 2001 LAAF Consolidated Traffic Count**

	Radar Traffic Count	Tower Traffic Count	Total
<b>Air Carrier</b>	2,362	3,803	6,165
<b>General Aviation <sup>1</sup></b>	8,884	15,065	23,949
<b>Military</b>	42,823	52,740	95,563
<b>Total</b>	<b>54,069</b>	<b>71,608</b>	<b>125,677</b>

Source: LAAF Air Traffic Control, September 2002

<sup>1</sup> Includes USBP operations

Four Restricted Areas, R-2303A, R-2303B, R-2303C and R-2312 are located in the vicinity of SVMA/LAAF. Restricted areas R-2303A, R-2303B and R-2303C are designated by the FAA as Joint Use, with Fort Huachuca being designated as the Using Agency and the Albuquerque Air Route Traffic Control Center being designated as the Controlling Agency. Restricted Area R-2312 is operated jointly by the United States Customs Department and the United States Air Force, contains a tethered air balloon and is designated sole use by the FAA. Restricted Area R-2303A begins at the surface and extends vertically to 15,000 feet above MSL. Restricted Area R-2303A excludes LAAF and is published as active from 7:00 a.m. to 4:00 p.m., Monday through Friday. Restricted Area R-2303B starts at 8,000 feet above MSL and extends vertically to 30,000 feet MSL. Restricted Area R-2303B is published as active from 7:00 a.m. to 4:00 p.m., Monday through Friday. Restricted Area R-2303C starts at 15,000 feet MSL and extends vertically to 30,000 feet above MSL. Restricted Area R-2303C is published as intermittently, twenty-four (24) hour advance notice. Restricted area R-2312 starts at the

1 ground surface and extends vertically to 15,000 feet above MSL. Restricted Area R-  
2 2312 is published as continuously active.

3 The Tucson Sector of the USBP has the following aircraft available for use in patrolling  
4 the U.S. - Mexican border: 13 OH-6 helicopters, 2 twin-engine helicopters (UH-1), 1  
5 MD600 and 1 AS 350 with forward-looking infrared capabilities, and 2 fixed-wing  
6 airplanes (1-Cessna 182 and 1-Piper Cub). Six of these aircraft are currently stationed  
7 at LAAF/SVMA with the remaining aircraft operating out of Tucson International Airport.  
8 Aircraft crews (pilots, mechanics, and other support personnel, as needed) are typically  
9 available around the clock to provide at least one aircraft aloft at any time. Fixed-wing  
10 aircraft typically fly along the border corridor during daylight hours only and typically at  
11 higher altitudes, except when prohibited by FAA airspace designations (INS 2002).

12 The helicopters typically fly at an altitude of 200 feet above ground level (AGL) or lower  
13 if mandated by an FAA airspace restriction, and typically fly at 2,000 to 4,000 feet AGL  
14 for reconnaissance in unrestricted areas. Helicopters may drop down to 200 feet AGL  
15 to accurately evaluate the condition of undocumented aliens to determine if rescue  
16 operations are necessary. There are no pre-defined rotary-wing aircraft flight patrol  
17 routes within the Tucson Sector. When emergency assistance is requested, USBP  
18 rotary-wing aircraft operate throughout the Tucson Sector area of operation (INS 2002).

19 In 2001, the USBP Tucson Sector recorded 1032 air operations at LAAF/SVMA  
20 (McGregor 2002). USBP operations at LAAF/SVMA are recorded by LAAF ATC as  
21 General Aviation radar and tower traffic. In 2001, USBP air operations totaled  
22 approximately 4% of general aviation radar and traffic counts at LAAF/SVMA, and less  
23 than 1% of overall radar and traffic counts at the airport.

#### 24 **4.11.2 CONSEQUENCES**

25 Potential impacts to transportation focus on key roadways and airspace in the ROI,  
26 including the transportation networks in the region that serve as direct or mandatory  
27 indirect linkages to USBP facilities. A determination of significant impact on traffic or  
28 transportation could result if any of the following conditions are anticipated to occur:

- 29 • Traffic or construction activities result in a substantial safety hazard to motorists,  
30 pedestrians, or bicyclists (military or civilian).
- 31 • Construction activities would result in the restriction of one or more lanes of a  
32 primary or secondary arterial or intersection during peak-hour traffic, thereby  
33 cutting its capacity and creating significant congestion.
- 34 • A situation involving endangerment or unusual risk to aircraft is created.
- 35 • An existing flight corridor is restricted to all public users.

1 **4.11.2.1 Alternative One – New Construction on 6.77 Acres East of the**  
2 **Taxiway “D” Extension**

3 Due to the remote location of proposed construction activities, and the lack of any  
4 significant traffic flow in or around these sites, construction activities will not result in  
5 significant delays or inconveniences to traffic. Further, there will be no restrictions of  
6 one or more lanes of primary or secondary arterials or intersections during peak-hour  
7 traffic. Therefore, no significance thresholds will be exceeded, and there will be no  
8 significant impacts on regional highways or road networks due to construction activities  
9 associated with the proposed action.

10 As of 2001, the USBP was responsible for less than 1% of total radar and tower traffic  
11 counts at LAAF/SVMA. With the proposed land exchange of 203-acres near  
12 LAAF/SVMA to the city of Sierra Vista and the resulting increase in aviation traffic  
13 related to that action, airspace conditions at SVMA/LAAF will become more congested  
14 (Coffman Associates, Inc. 2001).

15 The contribution of USBP air operations within the region will be most noticeable at  
16 LAAF, which tracks air operations. The proposed action includes an estimated 150%  
17 increase in annual USBP flight operations at LAAF/SVMA (an additional 4550  
18 operations). Increased USBP flight operations within the vicinity of LAAF/SVMA would  
19 be consistent with ongoing airfield operation. Increased airport operations were  
20 addressed in the city of Sierra Vista’s 203-acre land exchange EA (Coffman Associates,  
21 Inc. 2001). This increase in USBP air operations was included in the City’s analysis of  
22 potential impacts to airport facilities and capacities. The EA determined that the  
23 anticipated increase in air operations at LAAF/SVMA would not be significant. It is  
24 likewise determined that the proposed action is not anticipated to create a significant  
25 impact to air traffic or transportation at LAAF/SVMA or within the region and that  
26 existing infrastructure and air space are capable of supporting such an increase. The  
27 action is not anticipated to introduce any substantial safety hazard to motorists,  
28 pedestrians, or bicyclists (military or civilian), cause a new restriction in an existing  
29 public flight corridor, or cause any significant traffic congestion during construction or  
30 operation.

31 **4.11.2.2 Alternative Two – New Construction on 10 Acres West of the Taxiway**  
32 **“D” Extension**

33 Potential impacts are similar to those described for Alternative One. Instead of  
34 increased vehicular traffic on Airport Road on the SVMA, increased traffic would occur  
35 along Brainard Road and Arizona Street on Fort Huachuca. This increase in vehicular  
36 traffic would be negligible and would not impede ongoing military or civilian ground  
37 operations. No significant impact on traffic or transportation as a result of Alternative  
38 Two is anticipated.

1    **4.11.2.3      Alternative Three – Continued Leasing of LAAF Aircraft Hangar and**  
2                    **New Leasing of Existing SVMA Facilities**

3    Potential impacts are similar to those described for Alternative One, although no new  
4    construction would occur and construction-related impacts would not result. No  
5    significant impact on traffic or transportation is anticipated under Alternative Three.

6    **4.11.2.4      Alternative Four – The No Action Alternative**

7    Under Alternative Four, no change in existing traffic or transportation would occur. No  
8    impact on traffic or transportation is anticipated.

9    **4.12          HAZARDOUS MATERIALS**

10   **4.12.1        EXISTING CONDITIONS**

11   In accordance with the Comprehensive Environmental Response, Compensation and  
12   Liability Act (CERCLA), hazardous materials or hazardous wastes are substances that,  
13   because of their quantity, concentration, or physical, chemical, or toxic characteristics,  
14   may present substantial danger to public health or welfare, or the environment when  
15   released into the environment. The EPA has granted the state of Arizona the authority  
16   to promulgate and enforce certain environmental regulations, including the Resource  
17   Conservation and Recovery Act (RCRA). The state regulations, which are at least as  
18   stringent as federal regulations, are found in the Arizona Administrative Code (A.A.C.),  
19   Title 18.

20   The EPA and the Arizona Department of Environmental Quality (ADEQ), under the  
21   provisions of RCRA and the Arizona Hazardous Waste Management Act regulate  
22   hazardous waste management at SVMA. Hazardous materials storage at the airport  
23   complies with OSHA hazardous communications standards and with the National Fire  
24   Prevention Association (NFPA) standard codes.

25   The ROI for hazardous materials is confined to areas where construction activities  
26   would take place or where USBP operations may occur. Therefore, the ROI considered  
27   for the purposes of this evaluation are limited to the 6.77-acre and 10-acre parcels at  
28   LAAF/SVMA that could be developed and existing hangars at LAAF and SVMA. A  
29   report on hazardous wastes, materials, and substances at LAAF/SVMA can be found in  
30   Appendix C.

31   **4.12.1.1      Arizona Superfund Program and National Priorities List**

32   The Arizona Superfund Program List replaces the Arizona CERCLIS Information Data  
33   System (ACIDS). This list is more representative of the sites and potential sites within  
34   jurisdiction of the ADEQ Superfund Programs Section (SPS). A search of the ADEQ  
35   database identified the Fort Huachuca Installation as a NPL.

36   During late 2001, Fort Huachuca remediated all hydrocarbon contaminated soils at  
37   LAAF to levels below residential soil remediation levels (SRLs). In January 2002, Fort

Huachuca sent a report to ADEQ for concurrence on the remediation at LAAF. This was followed by a decision document to close out the four additional sites (including LAAF). ADEQ has signed the decision document memorializing the closeout of these sites. ADEQ states that there are no known health risks from the Fort Huachuca NPL site (All Lands 2002).

#### **4.12.1.2 Water Quality Assurance Revolving Fund (WQARF)**

The state of Arizona established a remedial program under A.R.S. 49-282 to facilitate the conservation and clean up of Arizona drinking water and water sources. Under the authority of the WQARF program, the State actively identifies any actual or potential impact upon State waters, evaluates the extent of contamination, identifies parties responsible, and provides money grants to assist in clean up activities. The ADEQ database dated March 2002 was searched to identify all WQARF sites within a 1.0-mile search radius of LAAF/SVMA. No WQARF Registry List sites were found (All Lands 2002).

#### **4.12.1.3 Resource Conservation and Recovery Act (RCRA) Compliance Log**

The RCRA Compliance Log lists facilities that have been, or presently are, under investigation for non-compliance with RCRA regulations. Inclusion of any facility on this list indicates a history of compliance problems and RCRA regulatory violation. The Arizona Department of Environmental Quality RCRA Compliance Log dated January 2002 included Fort Huachuca (EPA ID AZ0210020434)(All Lands 2002). The fort is identified as a Large Quantity Generator (more than 1000 kg per month) and a transporter of hazardous waste. In addition, the fort is identified on the Federal RCRA CORRACTS Facility list and the TSD Facility List (All Lands 2002).

#### **4.12.1.4 Underground Storage Tanks (UST)**

State (A.R.S. 49-1001 to 1014) and Federal (RCRA Subtitle I) laws require that persons who own or have owned underground storage tanks containing "regulated substances" complete a notification form and register the tank with the State. The ADEQ UST Log dated February 2002 was searched for UST sites located within a less than 0.125 mile search radius of LAAF/SVMA (All Lands 2002). Three USTs were identified (Table 4.7). The tank at SVMA contains gasoline and the tank at LAAF contains diesel. Information on the contents of the third tank was not available.

**Table 4.7 Underground Storage Tanks**

ID	FACILITY	ADDRESS
0-004514	Sierra Vista Municipal Airport	2500 Aviation Blvd, Sierra Vista, Arizona
0-007606	LAAF Bldg 91249 (Control Tower)	Brainard Road & Arizona Street, LAAF
0-005378	LAAF Bldg 87836	Brainard Road & Arizona Street, LAAF

ADEQ requires owners of underground storage tanks to report any and all releases of tank contents for which ADEQ maintains an ongoing file documenting the nature of contamination and the status of each such incident. The ADEQ Leaking Underground

Storage Tank (LUST) Log dated February 2002 identified one site within a 0.5-mile search radius of LAAF/SVMA (Table 4.8)(All Lands 2002).

**Table 4.8 Leaking Underground Storage Tanks**

ID	LUST ID NO	FACILITY	ADDRESS	DATE OPEN	DATE CLOSED	P CODE*	DIST./ DIREC.
0-005378	1186.01 2682.01 2709.01 3728.01	Bldg 87836 Libby Army Air Field	Brainard Rd & Arizona St	3/30/1990 2/12/1993 3/5/1993 9/22/1994	2/7/1994 2/8/1995 5/6/1996 5/8/1996	7 7 7 7	SITE

\* The P Code (Leaking UST Priority): 7: LUST case close-out involving combination with other LUST number/case at the same facility

#### **4.12.2 CONSEQUENCES**

Evaluation of the potential generation, use, or transport of hazardous materials and/or waste and its effect on public safety is based on both the potential for upset (accident) and the consequences of any project-related adverse event (negative effect associated with normal operations). Beneficial impacts may result from any direct or indirect safety improvements due to project implementation. A determination of significant impact related to hazardous waste and public safety could result if any of the following are anticipated to occur:

- Exposure of humans to unsafe levels of hazardous materials or hazardous waste.
- Generation of hazardous materials or hazardous waste in quantities or of a type that could not be accommodated by the current disposal system.
- Increase in likelihood of an uncontrolled release of hazardous materials that could contaminate soil, surface water, and groundwater.
- Create a situation involving endangerment or unusual risk to USBP personnel, visitors, nearby residents, and the general public off-site.

##### **4.12.2.1 Alternative One – New Construction on 6.77 Acres East of the Taxiway “D” Extension**

A 2002 records search (All Lands 2002) revealed no environmental hazards on or directly adjacent to the 6.77-acre parcel. The proposed action is not anticipated to generate hazardous materials or hazardous waste in quantities or of a type that could not be accommodated by the local waste disposal system. Petroleum, oil, or lubricants (POL) used during routine aircraft maintenance along with standard solvents and cleaning chemicals are the only hazardous substances expected to be stored or used at the USBP facility. The proposed action is not anticipated to result in an increased likelihood of an uncontrolled release of hazardous materials that could contaminate soil, surface water, or groundwater. All hazardous materials will be stored, handled, and disposed of in accordance with local, state, and federal laws and regulations.

1 Soil contamination may result from spills of POL during construction. To preclude any  
2 significant impact, POL would be stored, handled, and disposed of in accordance with  
3 generally acceptable industry standards. No significant impact resulting from soil  
4 contamination is anticipated. Overall, impacts relating to hazardous materials,  
5 substances or waste are anticipated to be less than significant.

#### 6 **4.12.2.2 Alternative Two – New Construction on 10 Acres West of the Taxiway** 7 **“D” Extension**

8 A 2002 records search (All Lands 2002) revealed no environmental hazards on or  
9 directly adjacent to the 10-acre parcel. Potential impacts are identical to those described  
10 for Alternative One. No significant impact from hazardous waste, substances or  
11 materials is anticipated.

#### 12 **4.12.2.3 Alternative Three – Continued Leasing of LAAF Aircraft Hangar and** 13 **New Leasing of Existing SVMA Facilities**

14 Potential impacts are similar to those described for Alternative One. The potential for  
15 POL releases during construction would not occur. No significant impact from  
16 hazardous waste, substances, or materials is anticipated.

#### 17 **4.12.2.4 Alternative Four – The No Action Alternative**

18 No change in the existing storage or handling of hazardous waste, substances, or  
19 materials would occur. No significant impact from hazardous waste, substances or  
20 materials is anticipated.

### 21 **4.13 SOCIOECONOMICS**

#### 22 **4.13.1 EXISTING CONDITIONS**

23 The ROI affected by the proposed action is the city of Sierra Vista including Fort  
24 Huachuca and secondarily, Cochise County. The proposed action could have an  
25 impact on the economy as well as the local infrastructure of both the city and the  
26 County. The baseline conditions described in this section were taken from federal,  
27 state, county, and installation sources.

28 Sierra Vista is the regional center for southeastern Arizona and is the commercial center  
29 for Cochise County and parts of northern Mexico (City of Sierra Vista 2002). Fort  
30 Huachuca is an integral part of this local community, both as a major consumer of  
31 goods and services and as a major employer.

#### 32 **4.13.1.1 Population**

33 According to the April 2000 Census, the population in Cochise County has grown from  
34 97,624 in 1990 to a total population of 117,755 in the year 2000 (U.S. Bureau of the  
35 Census 1990 and 2000). Arizona's population in 1990 was estimated at 3,665,228 (U.S.

Bureau of the Census 1990) and was 5,130,632 in 2000 (U.S. Bureau of the Census 2000). Based on this information, Cochise County accounts for approximately 2.3 percent of Arizona's population. Most of the major population centers in Cochise County have experienced growth since 1990 (see Table 4.9).

The ethnic diversity within Cochise County is comprised of 76.7 percent unspecified white/ Caucasian, 30.7 percent Hispanic, 4.5 percent African American, 1.6 percent Asian, 0.3 percent Native American, 0.1 percent Native Hawaiian and other Pacific Islander, and the remaining 10 percent is described as other. The ethnic diversity within the Sierra Vista population is comprised of 73.3 percent as unspecified white/Caucasian, 15.8 percent Hispanic, 10.9 percent African American, 3.6 percent Asian, 0.8 percent Native American, 0.5 percent Native Hawaiian and Other Pacific Islander, and 7.5 percent Other (U.S. Bureau of the Census 2000). The median household income for Cochise County is \$29,295, which is less than the \$34,751 estimate for Arizona (U.S. Bureau of the Census 2000).

**Table 4.9 Population and Growth Rates for Populations Centers in Cochise County**

City	1990 Population	2000 Population	% Change 1990-2000
Sierra Vista	32,983	37,775	+14.5 %
Douglas	12,822	14,312	+11.6 %
Bisbee	6,288	6,090	-3.1 %
Benson	3,824	4,711	+23.2 %
Huachuca City	1,782	1,751	-1.7 %
Tombstone	1,220	1,504	+23.3 %
Cochise County	97,624	117,755	+20.6 %

Source: U.S. Bureau of the Census 1990; U.S. Bureau of the Census 2000.

#### **4.13.1.2 Housing**

The 2000 census provides a count of housing units in Sierra Vista and depicts a strong housing market. In 2000, the total number of housing units totaled 15,685, with 14,196 units being occupied and 1,489 units vacant. Of these 14,196 units, 7,417 were owner-occupied and 6,779 were renter-occupied. An estimated 10.7 percent of the rental properties were vacant while only 2.0 percent of the owned properties were vacant (U.S. Bureau of the Census 2000). The growth of Sierra Vista is evident when comparing the 2000 census figures to those from the 1990 census (Table 4.10). In the ten years between the two censuses, the total number of housing units grew 9.8 percent with a shift towards owning a residence over renting. The number of owner occupied units grew by 38.2 percent between 1990 and 2000 while the number of renter occupied units grew only 7.5 percent. Overall vacancy rates dropped by 23.1 percent for owned properties and by 5.3 percent for rented properties. These figures demonstrate a strong trend of people relocating to the Sierra Vista area.

**Table 4.10 Housing Trends in Cochise County**

Housing	1990 Estimates	2000 Estimates	% Change 1990-2000
Total Housing Units	12,927	14,196	+9.8
Occupied Units	11,672	14,196	+21.6
Vacant Units	1,255	1,489	+18.6
Owner Occupied Units	5,366	7,417	+38.2
Renter Occupied Units	6,306	6779	+7.5
Homeowner Vacancy Rate	2.6	2.0	-23.1
Renter Vacancy Rate	11.3	10.7	-5.3

Source: U.S. Bureau of the Census 1990; U.S. Bureau of the Census 2000.

#### **4.13.1.3 Economic Activity**

Tourism is an important part of Cochise County's economy, with national, state and county parks being the primary attractions. National parks and forests, including Fort Bowie, the Coronado Memorial and Chiricahua National Monument, and state parks including Tombstone Courthouse State Historical Park and Kartchner Caverns attract thousands of visitors each year. It is estimated that a typical visitor spends an average of \$127.00 per day during a multiple-day stay in Cochise County and approximately \$57.00 per day if not staying overnight (CCCER 2000). The peak tourist season within the County is from Christmas until Easter.

Following the September 11th terrorist attacks, park visitation decreased by approximately 2.3 percent. Parks that draw local visitors were not as affected as parks that draw visitors nationally. Kartchner Caverns, which has gained national popularity, experienced visitor numbers that were up approximately 6 percent for the same time period one year prior before September 11th, but dropped by 9.4 percent from September to December (CCCER 2002a). However, recovery from these declines has been noted in the form of increased hotel receipts, particularly for towns situated along Interstate 10 such as Benson (receipts up 12.4 percent) and Willcox (receipts up 57.2 percent). One possible explanation for this recovery is the significant decrease in the number of people using air transportation, choosing instead to travel by automobile (CCCER 2002b).

#### **4.13.1.4 Employment**

The unemployment rate has been declining in Cochise County since 1998. In January 1998, the unemployment rate for the County was approximately 8.1 percent, while in 2001 it was 4.6 percent (CCCER 2002a). Overall, the employment rate in Cochise County increased from August 2001 to December 2001, with the greatest growth occurring in the Government (+375 jobs) and communications and public utilities (+125 jobs). Decreases were seen in the construction (-100 jobs) and manufacturing (-25 jobs) sectors (CCCER 2002a) (Table 4.11).

Government and government enterprises are the largest employers (25 percent of total non-agricultural positions). The service industry employs about 20 percent and the

1 retail and wholesale trade industries represent 18 percent of the total employment for  
2 the County.

3 **Table 4.11 Cochise County Non-Agricultural Employment by Industry, 2001**

Industry	Number Employed August 2001	Number Employed December 2001
Construction	2,200	2,100
Manufacturing	950	925
Transportation and Public Utilities	1,275	1,300
Trade	7,925	8,050
Finance, Insurance and Real Estate	775	725
Services	8,875	9,000
Government	10,925	11,300
<b>TOTAL</b>	<b>32,925</b>	<b>44,404</b>

4 Source: CCCER 2002a.

#### 5 **4.13.1.5 Schools**

6 Sierra Vista Unified School District supports the educational needs of the residents of  
7 Sierra Vista. The district includes eight elementary schools, three middle schools and  
8 one high school (Arizona Department of Commerce 2001). In addition, Fort Huachuca  
9 has three schools that accommodate students from kindergarten through eighth grade.  
10 High school students from the post attend Buena High School in Sierra Vista.

#### 11 **4.13.2 CONSEQUENCES**

12 A determination of significant impact on local or regional socioeconomic conditions  
13 could result if the alternative was found to induce substantial growth or decline in local  
14 or regional population either through provision of employment or permanent housing.

##### 15 **4.13.2.1 Alternative One – New Construction on 6.77 Acres East of The** 16 **Taxiway “D” Extension**

17 The influx of seven additional full-time equivalent employees (FTEs) and associated  
18 families represents a less than 0.0001% increase in the local population and will have a  
19 negligible effect on the local economy. No significant financial impact on the  
20 surrounding communities is anticipated to result from the proposed action.

21 Given the small scale of the action relative to the size and complexity of the local  
22 economy, no significant socioeconomic impacts are anticipated. No appreciable  
23 change in local population distribution, employment, housing demand or expenditure  
24 patterns is anticipated as a result of this action.

1 The effects of this change in workforce in the area will not be significant in a local or  
2 regional context. Construction-related funding for the proposed action is not anticipated  
3 to be significant in the context of local or regional construction spending. No significant  
4 socioeconomic impact to the city of Sierra Vista or surrounding communities is  
5 anticipated as a result of the proposed action.

6 **4.13.2.2 Alternative Two – New Construction on 10 Acres West of the Taxiway**  
7 **“D” Extension**

8 Potential impacts are identical to those described for Alternative One. No significant  
9 impact to socioeconomics and economic development is anticipated.

10 **4.13.2.3 Alternative Three – Continued Leasing of LAAF Aircraft Hangar and**  
11 **New Leasing of Existing SVMA Facilities**

12 Potential impacts are similar to those described for Alternative One without any fiscal  
13 impact from construction activities. No significant impact to socioeconomics and  
14 economic development is anticipated.

15 **4.13.2.4 Alternative Four – The No Action Alternative**

16 No change in socioeconomics and economic development would occur. No impact on  
17 socioeconomics and economic development is anticipated.

18 **4.14 ENVIRONMENTAL JUSTICE (EXECUTIVE ORDER 12898) AND PROTECTION OF**  
19 **CHILDREN (EXECUTIVE ORDER 13045)**

20 **4.14.1 EXISTING CONDITIONS**

21 Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority*  
22 *Populations and Low Income Populations*, directs federal agencies to identify and  
23 address, as appropriate, disproportionately high and adverse human health or  
24 environmental impacts of their program, policies, and activities on minority or low  
25 income populations in the surrounding community.

26 Executive Order 13045, *Protection of Children from Environmental Health Risks and*  
27 *Safety Risks*, requires federal agencies to identify and assess the environmental health  
28 risks and safety risks of policies, programs, activities and standards that may  
29 disproportionately affect children.

30 **4.14.2 CONSEQUENCES**

31 Proposed training activities would occur in areas of existing commercial and industrial  
32 activity. There are no housing areas or residential populations within the immediate  
33 vicinity of LAAF/SVMA and the proposed activities would not adversely impact any  
34 segment of the population. The increase in USBP SAR operations would provide  
35 additional health and human safety resources for UDAs in the remote border region.

1 Therefore, no disproportionate impacts to low income or minority populations would  
2 occur as a result of the proposed action.

3 No products or substances resulting from the proposed action are likely to pose health  
4 or safety risks to children, as (1) no hazardous products or substances that would pose  
5 a health risk to children are anticipated to be generated by the proposed action, (2) no  
6 schools or childcare centers are located within the area of the proposed action, and (3)  
7 no children are likely to be exposed to any safety risks associated with the proposed  
8 action. The increase in USBP SAR operations would provide additional health and  
9 human safety resources for children in the remote border region. No significant or  
10 disproportional health risks and/or safety risks to children are anticipated to result of the  
11 proposed action.

## 12 **4.15 HEALTH AND HUMAN SAFETY**

### 13 **4.15.1 EXISTING CONDITIONS**

14 Aircraft Rescue and Fire Fighting (ARFF) facilities are provided by the U.S. Army and  
15 are located on the south side of the airfield. This ARFF houses the emergency fire  
16 suppression equipment for the airfield and provides the initial response to any aircraft  
17 fires. It is supported by the city of Sierra Vista Fire Department and Fort Huachuca,  
18 depending on the location of the incident. According to the September 1999,  
19 *Airport/Facility Directory*, the ARFF meets the requirements of an Index A facility  
20 (Coffman Associates, Inc. 2001).

21 USBP SAR operations are vitally important to local and regional populations. Any  
22 restriction in the ability of the USBP to provide SAR operations in the region would  
23 impact the health and human safety of UDAs.

### 24 **4.15.2 CONSEQUENCES**

#### 25 **4.15.2.1 Alternative One – New Construction on 6.77 Acres East of the** 26 **Taxiway “D” Extension**

27 Safety and health impacts on the local population associated with the proposed project  
28 would be primarily construction-related. Hazards associated with construction activities  
29 may include the possibility of improperly stored, protected, or operated equipment. Due  
30 to the relatively short duration of construction activities and industry standards for  
31 construction site safety, health and safety impacts are anticipated to be less than  
32 significant.

33 Due to the proximity of fire suppression equipment and the current state of readiness at  
34 the fire stations at the airport, impacts associated with fire protection would be less than  
35 significant. Since the area is located within an area identified as a limited access,  
36 secure area, conflict with the general public is not anticipated. The proposed action  
37 would occur beyond all electromagnetic hazard zones and would not introduce the

1 public or any USBP personnel to harmful levels of electromagnetic radiation.  
2 Recreational activities would not occur in the vicinity of the proposed facility. Therefore,  
3 potential safety impacts to the recreating public would be less than significant. The  
4 proposed action would not expose the general public to hazardous materials or  
5 hazardous waste or create a situation involving endangerment or unusual risk to USBP  
6 personnel, visitors, nearby residents, and the general public offsite.

7 The increase in USBP SAR capabilities along the border would produce a positive  
8 impact on health and human safety of UDAs and other persons traveling in remote  
9 areas of the border region. Therefore, the proposed action is anticipated to have a  
10 positive yet less than significant impact on public health and human safety at  
11 LAAF/SVMA and surrounding environment.

#### 12 **4.15.2.2 Alternative Two – New Construction on 10 Acres West of the Taxiway** 13 **“D” Extension**

14 Potential impacts are identical to those described for Alternative One. Alternative two is  
15 anticipated to have a positive, yet not significant impact on public health and human  
16 safety.

#### 17 **4.15.2.3 Alternative Three – Continued Leasing of LAAF Aircraft Hangar and** 18 **New Leasing of Existing SVMA Facilities**

19 Potential impacts are similar to Alternative One without construction activities.  
20 Alternative three is anticipated to have a positive, yet not significant impact on public  
21 health and human safety.

#### 22 **4.15.2.4 Alternative Four – The No Action Alternative**

23 No change in existing public health and safety would occur. The benefits of increased  
24 USBP SAR operations would not occur. No impact on public health and human safety is  
25 anticipated.

### 26 **4.16 PERMITS AND REGULATORY AUTHORITY**

27 The complete identification of permits and authorizations required for implementing,  
28 operating, and/or maintaining the proposed action can not be determined at this time  
29 because no facility construction plan has been developed. All relevant permits and  
30 regulatory authorizations need to be obtained prior to project implementation and made  
31 available to the general public as appropriate.

### 32 **4.17 SUSTAINABILITY AND GREENING**

33 Per Executive Order 12780, the proposed action will incorporate (to the extent feasible)  
34 all practical methods for sustainability and greening in daily operations. These methods  
35 include but are not limited to:

- On-site solid waste reduction and recycling programs
- Energy conservation programs
- Source reduction and pollution prevention programs

#### **4.18 CUMULATIVE IMPACTS**

Cumulative impacts are defined in the CEQ regulations (40 CFR 1500-1508) as those impacts attributable to the proposed action combined with other past, present, or reasonably foreseeable future impacts regardless of the source. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. However, in order to be considered a cumulative impact, the effects must:

- Occur in a common locale or region.
- Not be localized (i.e., they would contribute to effects of other actions).
- Impact a particular resource in a similar manner.
- Be long-term (short-term impacts would be temporary and would not typically contribute to significant cumulative impacts).

##### **4.18.1 ANALYSIS OF CUMULATIVE IMPACTS**

Analysis of cumulative impacts requires the evaluation of a broad range of information that may have a relationship to the proposed action and alternatives. A good understanding of the politics, sociology, economics, and environment of the region is key to this analysis, as is an accurate evaluation of factors that contribute to cumulative impacts. The most common regional and local environmental concerns voiced during previous public scoping activities in the Sierra Vista area have included:

- Trends relating to water resources (the San Pedro River, groundwater mining, water quality).
- Trends affecting biological resources (particularly federally-listed species and their habitats).
- Population growth and economic activity in the Fort Huachuca/Sierra Vista area and the resulting implications on water and ecological resources in the region.

All resource areas were examined for regional conditions and the potential for the proposed action and alternatives to contribute to regional trends or environmental conditions. Impacts from the proposed action were determined to have no substantial contribution (and no significant impact) to regional trends or conditions of the environment on the following resources:

- Regional Setting and Land Use

- Visual Resources
- Geology, Soils and Topography
- Floodplains
- Air Quality
- Noise
- Historic and Cultural Resources
- Infrastructure Available
- Traffic and Transportation
- Hazardous Waste, Substances and Materials
- Environmental Justice and Protection of Children
- Health and Human Safety

These areas are not further discussed from a cumulative impact perspective.

The following sections address the only three resource areas where the impacts of the proposed action and implementation alternatives, in connection with related past, present, and reasonably foreseeable future actions warrant further consideration (water resources, biological resources, and socioeconomics and economic development). This consideration is given because of the elevated sensitivity regarding these resources within the region, not because the alternatives are anticipated to create any significant contribution to cumulative impacts on these resources. In fact, none of the alternatives analyzed in this EA would have any significant contribution to past, present, and reasonably foreseeable future actions in the local or regional context for any given resource.

#### **4.18.2 WATER RESOURCES**

The Sierra Vista sub watershed is an extremely active area with respect to water resource management activities. Concern over regional groundwater withdrawal and potential impacts to the stream flow in the San Pedro River have increased in recent years. Considerable effort has been devoted to assessing the nature and extent of these impacts, as well as to developing and implementing plans to mitigate any adverse impacts. The city of Sierra Vista, Fort Huachuca, numerous federal, state, and local agencies, and a large number of citizens and interest groups have been involved in this process. The city of Sierra Vista and Fort Huachuca are actively pursuing and are in the process of implementing a wide variety of water recharge and consumption-reduction projects that will have a positive cumulative impact on regional water resources.

Through careful planning, Fort Huachuca has experienced an overall decline in installation water use. Fort Huachuca has adopted and implemented a conservation strategy that has already reduced use by 1000 ac-ft of water per year since 1993, and is anticipating to save, recharge, and/or reuse as much as another 3000 ac-ft per year by

1 2011. On-post conservation efforts include low water-use landscaping, retrofitting with  
2 low water-use fixtures, installation and use of waterless urinals, an aggressive leak-  
3 detection program, a restrictive landscape watering policy and enforcement, and an  
4 educational awareness process. Other projects include effluent and urban runoff  
5 recharge, reuse of treated effluent for golf course and parade field watering, and  
6 retirement of agricultural pumping through purchase of conservation easements.

7 As discussed previously, the city of Sierra Vista and Fort Huachuca have both  
8 committed to wastewater treatment and recharge. The city's project was evaluated in  
9 the *Environmental Assessment for the Sierra Vista Water Reclamation Facility Effluent*  
10 *Recharge Project*, approved by the U.S. Department of the Interior, Bureau of  
11 Reclamation in November 1999. It addresses all existing and future development within  
12 the City's 208 Water Quality Management boundary. The Fort's proposal was included  
13 in their November 1999 Final EIS. It located the recharge facility on Fort Huachuca  
14 property, directly across SR 90 from the airfield. The intent of both of these recharge  
15 facilities is to produce a "mound" of groundwater between the cone of depression and  
16 the San Pedro Riparian NCA. The effect would be to ensure continued groundwater to  
17 "feed" the river and the local habitat. Construction of the Army's East Range recharge  
18 facility and wastewater treatment plant upgrade is expected be completed in January  
19 2003.

20 In addition, the city has adopted and implemented a number of codes and policies, as  
21 well as are participating in regional efforts to improve the groundwater situation. These  
22 efforts include the following:

- 23 • *City participation on San Pedro Joint Task Force*. This group was comprised of  
24 representatives of the city of Sierra Vista and Cochise County. They identified  
25 watershed management planning options for the Sierra Vista sub watershed of  
26 the San Pedro River Basin.
- 27 • *City participation in the Upper San Pedro Partnership*. Comprised of several  
28 federal and state agencies, local communities, Cochise County, and The Nature  
29 Conservancy, this Partnership identifies, analyzes from a technical perspective,  
30 and prioritizes policies and projects to manage water resources to sustain the  
31 economic viability of the sub watershed without adversely impacting the  
32 environmental amenities. The Partnership works to leverage funding sources and  
33 coordinate the implementation of projects.
- 34 • *City participation in the Cooperative Recharge Project* intended to investigate  
35 several methods of storm water recharge through intensive monitoring to  
36 determine the groundwater recharge benefits. The most cost effective strategies  
37 are recommended for implementation on a large scale throughout the watershed.
- 38 • *Development Code (DC), Article 151.15, Landscaping, Walls, Screening, and*  
39 *Buffers* addresses use of salvaged plants in landscaping; prohibits use of turf in  
40 governmental, commercial, and industrial development; provides a low water  
41 use/drought tolerant plant list.

- 1 • *DC, Article 151.16, Water Conservation* identifies water-saving plumbing fixtures  
2 for new residential construction, as well as new and remodeled commercial,  
3 industrial, and public development. Addresses bathroom and kitchen fixtures;  
4 landscaping (irrigation); certain high-water users (such as commercial car wash  
5 facilities, parks, and golf courses); among other items.
- 6 • *City Code of Ordinance. Title 9, Chapter 91, Section 91.10, What constitutes a*  
7 *Public Nuisance.* A public nuisance is defined, in part, as willfully or negligently  
8 permitting or causing the escape or flow of water into the public right-of-way in  
9 such quantity as to cause flooding, to impede vehicular or pedestrian traffic, to  
10 create a hazardous condition for such traffic, or to cause damage to the public  
11 streets or alleys of the city.
- 12 • Development of well-head protection program, in cooperation with ADEQ.
- 13 • Sponsor of *The Water Wise Program*, designed to educate citizens in water  
14 conservation techniques. According to the city of Sierra Vista, Environmental  
15 Services, Program Summary, Spring 2000, "95 percent of homes/business  
16 receiving Water Wise audits have changed habits to conserve more water."  
17 Indicators from private water companies identify a reduction in individual  
18 homeowner consumption of 10-20 percent since the city initiated this project.
- 19 • Distribution of automatic shut-off hose nozzles to local groups hosting community  
20 car washes.
- 21 • Hosted demonstration projects that utilize water harvesting, low water use  
22 landscaping, and xeriscape techniques. Included was the conversion of grass  
23 landscaping to desert adapted landscaping at municipal buildings and medians  
24 throughout the city.

25 The city has also adopted two additional programs: "Slow the Flow," which would focus  
26 on indoor water conservation measures by modifying or replacing high volume and  
27 leaky water fixtures, and "Operation Low Flow," which targets the replacement of high  
28 flow toilets with low flow units using a rebate or other incentive to stimulate participation.  
29 Slow the Flow would be a free service to all city sewer and/ or sanitation customers.  
30 The city estimates that over 11,000 homes were constructed prior to the 1986 low flow  
31 ordinance; conversion of all these units is estimated to save over 280 acre-feet/year.  
32 Implementation of Operation Low Flow could potentially save over 950 acre-feet/year of  
33 groundwater.

34 Due to Fort Huachuca's ongoing water conservation efforts (reduced water consumption  
35 by over 1,000 AF since 1993) and the City's effluent recharge project and other  
36 initiatives, the water deficit in the Sierra Vista sub watershed is reported to be 5,144 AF,  
37 instead of the generally used number of 7,000 AF (USFWS 2002). By subtracting Fort  
38 Huachuca's conservation measures of 3,077 AF, the USFWS states that the current  
39 (year 2002) groundwater deficit not attributable to Fort Huachuca, is 2,067 AF. This  
40 figure of 2,067 AF does not include projected population growth. The projected  
41 population increase would result in a net increase of 1,239 AF of additional groundwater  
42 use in the sub watershed by 2011 (USFWS 2002). This includes the correction for the

1 associated recharge going back into the aquifer from either effluent recharge facilities or  
2 septic systems. By taking the existing groundwater deficit not attributable to Fort  
3 Huachuca of 2,067 AF and adding 1,239 AF of projected additional water usage, the  
4 total cumulative groundwater deficit by 2011 is reported by USFWS to be approximately  
5 3,306 AF. This groundwater use is cumulative to the proposed action and represents  
6 the best estimate of use likely to occur within the 10-year time frame of the proposed  
7 action.

#### 8 **4.18.2.1 Alternative One**

9 As described in Section 4.4, the entire 6.2 acre-feet of annual consumptive water use  
10 would be fully offset through water conservation and reuse projects funded by the  
11 Border Patrol as part of the proposed action. Overall, the water resource future of the  
12 region is complex and difficult to predict because it is comprised of both negative and  
13 positive trends. However, the contribution of the proposed action to cumulative impacts  
14 on water resources in the region is not anticipated to be significant.

15 Additional benefits to groundwater conditions will result through a number of low water-  
16 use feature requirements at the proposed USBP facility and the on-site  
17 retention/detention of storm water.

#### 18 **4.18.2.2 Alternative Two**

19 Under Alternative Two, the entire 6.2 acre-feet of annual consumptive water use would  
20 be offset through water conservation projects implemented in accordance with  
21 USAIC&FH Policy 119, *Fort Huachuca Water Use Mitigation Policy* (USAIC&FH 2002).  
22 Therefore, Alternative Two would not increase annual water consumption at Fort  
23 Huachuca or in the ROI or within the Sierra Vista sub watershed or greater region.

24 Additional benefits to groundwater conditions will result through a number of low water-  
25 use feature requirements at the proposed USBP facility and the on-site  
26 retention/detention of storm water. Alternative Two is not anticipated to be cumulatively  
27 significant on water resources in the Sierra Vista sub watershed or greater region.

#### 28 **4.18.2.3 Alternative Three**

29 Contributions to cumulative impacts from Alternative Three are essentially the same as  
30 Alternative One, with the exception that no new construction would occur. Alternative  
31 Three is not anticipated to be cumulatively significant on water resources in the Sierra  
32 Vista sub watershed or greater region.

#### 33 **4.18.2.4 Alternative Four - The No-Action Alternative**

34 Selection of the No Action Alternative would mean that existing levels of estimated  
35 water use associated with USBP activities at LAAF would continue. It is anticipated that  
36 the No Action Alternative would not be cumulatively significant on water resources in the  
37 Sierra Vista sub watershed or greater region.

### 1    **4.18.3    BIOLOGICAL RESOURCES AND ECOSYSTEMS**

2    Cumulative impacts to ecological resources at LAAF/SVMA and in the greater region  
3    are the result of the complex interaction of several different trends. Army and city of  
4    Sierra Vista water resource utilization and conservation activities (as discussed above)  
5    as well as ongoing natural resource management programs are a major factor in the  
6    overall future of local ecological resources and protected species. These measures  
7    address both groundwater and local riparian concerns, and will provide an important  
8    long-range contribution to the overall health of the entire region's ecological resources,  
9    particularly that of the San Pedro Riparian NCA. This NCA is critical habitat for a  
10    number of species (to include avian, plant, and fish) and serves as a significant  
11    international migratory bird corridor in the Southwest.

#### 12    **4.18.3.1    Alternative One**

13    Under Alternative One, the entire 6.2 acre-feet of annual consumptive water use would  
14    be offset through water conservation projects implemented under the proposed action.  
15    Therefore, Alternative One would not increase annual water consumption in Sierra Vista  
16    or in the ROI and have no impact on water resources in the Sierra Vista sub watershed  
17    or greater region. Therefore Alternative One would not contribute to cumulative impacts  
18    on habitat and species populations along the San Pedro Riparian NCA or within the  
19    greater region. The loss of approximately 6.7 acres of disturbed habitat is not  
20    cumulatively significant because of the abundant availability of superior undisturbed  
21    habitat surrounding the site and in the greater area.

22    Another regional issue that presents significant environmental concerns to biological  
23    resources is the intrusion of non-native or exotic species into the area and the  
24    accompanying displacement of vulnerable native species. Some non-native species  
25    have shown the ability under current conditions to out-compete native species. These  
26    include fish species in the San Pedro River, grasses (i.e., buffel, Johnson, and  
27    Lehmann's lovegrass), bullfrogs, and tamarisk. The proposed action does not contribute  
28    to any cumulative impact with respect to this non-native species concern.

#### 29    **4.18.3.2    Alternative Two**

30    Under Alternative Two, the entire 6.2 acre-feet of annual consumptive water use would  
31    be offset through water conservation projects implemented in accordance with  
32    USAIC&FH Policy 119, *Fort Huachuca Water Use Mitigation Policy* (USAIC&FH 2002).  
33    Therefore, Alternative Two would not increase annual water consumption at Fort  
34    Huachuca or in the ROI and have no impact on water resources in the Sierra Vista sub  
35    watershed or greater region. Therefore Alternative Two would not contribute to  
36    cumulative impacts on habitat and species populations along the San Perdo Riparian  
37    NCA or within the greater region. The loss of approximately 10 acres of undisturbed  
38    habitat would is not cumulatively significant because of the abundant availability of  
39    similar habitat surrounding the site and in the greater area.

40    Additional benefits to groundwater conditions will result through a number of additional  
41    low water-use feature requirements at the proposed USBP facility and the on-site

1 retention/detention of storm water. Alternative Two is not anticipated to be cumulatively  
2 significant.

### 3 **4.18.3.3 Alternative Three**

4 Contributions to cumulative impacts from Alternative Three are essentially the same as  
5 Alternative One, with the exception that no new construction would occur. Therefore  
6 Alternative Three would not contribute to cumulative impacts on habitat and species  
7 populations along the San Pedro Riparian NCA or within the greater region.

### 8 **4.18.3.4 Alternative Four – The No-Action Alternative**

9 With Alternative Four, the proposed action would not be implemented. No construction  
10 activities would result and between 5 and 10-acres of habitat disturbance and/or  
11 removal would not occur. This would not be cumulatively significant in the regional or  
12 local context of biological resources and ecosystems.

## 13 **4.18.4 SOCIOECONOMICS AND ECONOMIC IMPACT**

14 In general, employment in the region has experienced a moderate increase relative to  
15 other small urban communities in Arizona; however, recent trends have indicated a  
16 weakening of the economy. This weakening is a reflection of the nationwide changes in  
17 the economy, particularly following the September 11th terrorist attacks. Two factors  
18 cited as contributing to a downturn in the local economy include a reduction in tourism  
19 and the deployment of military personnel from Fort Huachuca. For example, retail  
20 business in Benson dropped 40 percent following September 11th. While these impacts  
21 were clearly evident in the last quarter of 2001, the impacts seem to have lessened  
22 somewhat in the first half of 2002 (CCCER 2002b). Tourism is an important part of  
23 Cochise County's economy, with national, state and county parks being the primary  
24 attractions.

### 25 **4.18.4.1 Alternatives One through Three**

26 Regional population growth is projected to increase, despite the relatively stable  
27 employment base and population associated with LAAF/SVMA and Fort Huachuca.  
28 Attractions for people to move to the area include mild climate, international business  
29 opportunities, and reasonable real estate prices. Despite the recent small increase in  
30 authorizations at Fort Huachuca, due to a temporary increase in students, LAAF/SVMA  
31 and Fort Huachuca's influence on regional growth is declining due to the opening of  
32 Karchner Caverns and associated businesses, and general population movement to the  
33 Southwestern U.S.

34 This action has the potential for eight additional USBP permanent party personnel and  
35 their families to relocate to the Sierra Vista area. Other actions currently proposed for  
36 the area include a small increase at the Army Signal Command at Fort Huachuca, the  
37 proposed 203-acre land exchange between the Army and city of Sierra Vista, and  
38 ongoing economic and housing development unrelated to this action. It is the conclusion

1 of this analysis that implementation of any of these three alternatives is not anticipated  
2 to contribute significantly to regional growth or economic expansion.

3 The proposed construction action would provide less than approximately \$2 million  
4 during the construction period, probably through 2003; most of which will be in the form  
5 of payments for construction materials and employees. Therefore, economic impact to  
6 the region from this action is not significant. In the context of cumulative impacts, no  
7 significant impact to the local economy is anticipated from the minor increases in USBP  
8 personnel or construction activities that may accompany this action.

#### 9 **4.18.4.2 Alternative Four – The No-Action Alternative**

10 Employment authorizations at LAAF/SVMA and Fort Huachuca through FY 2002  
11 indicate a relatively stable employment base. The other contributors to the local  
12 economy are other federal agencies; total federal contract, supply and services dollars;  
13 and a growing opportunities in international business and ecologically-based tourism  
14 industry, all of which will likely continue at the same level or increase slightly. The  
15 Arizona State Lands Department's Karchner Caverns is increasing economic activity in  
16 the region, predominantly in the service industry associated with food and lodging of  
17 tourists.

18 Demographic trends indicate that an increasing number of local residents are non-  
19 federal retirees relocating from outside the area. These individuals are attracted by  
20 good weather and a reasonable cost of living. They contribute accumulated wealth and  
21 steady incomes to an economic base increasingly less dependent on Fort Huachuca.  
22 The No Action Alternative would have no contribution to local or regional cumulative  
23 trends or impacts on socioeconomics.

#### 24 **4.18.5 SUMMARY**

25 Implementation of Alternatives One, Two and Three are not anticipated to result in any  
26 significant contribution to past, present, and reasonably foreseeable future actions in the  
27 local or regional context for any given resource including water resources, biological  
28 resources and ecosystems, and socioeconomics and economic impacts.  
29 Implementation of Alternative Four (No Action) would have no contribution to cumulative  
30 impacts on these resources.

### 31 **4.19 ENVIRONMENTAL DESIGN CONSIDERATIONS/MITIGATION MEASURES**

32 The USBP has committed to the incorporation of all feasible design considerations to  
33 reduce utility and natural resource consumption and lessen any impact that the  
34 proposed action could have on the human environment. In an effort to develop a more  
35 sustainable facility and demonstrate positive environmental stewardship, the USBP will  
36 incorporate environmental design considerations including but not limited to the  
37 following:

- 1 • Wastewater generated at the site will be recharged and/or reused. Recharge will  
2 occur at one of three sites: on-site, at the Fort's planned recharge facility near the  
3 airport, and/or at the city's recharge facility. Wastewater will be used for non-  
4 potable purposes such as landscaping where feasible.
- 5 • New facilities will be constructed with the following:
  - 6 ○ Waterless urinals in all of the men's restrooms.
  - 7 ○ Low water-use fixtures throughout the buildings.
  - 8 ○ On-site storm water detention/retention.
  - 9 ○ Use of drought resistant native plant landscaping.
- 10 • Utilization of BMPs to reduce or eliminate impacts to water quality and air quality  
11 during construction.
- 12 • Should historic or cultural resources be unearthed during construction, all  
13 construction activities in the vicinity will cease until a determination can be made  
14 as to its/their significance and, if necessary a data recovery plan be  
15 implemented.

#### 16 **4.20 MIGRATORY BIRD TREATY ACT, 16 U.S.C. 703-712; 50 CFR 21; AND 50 CFR 13.**

17 The take of migratory birds by Federal agencies is prohibited unless authorized  
18 pursuant to regulations promulgated under the Migratory Bird Treaty Act (MBTA). Under  
19 the MBTA, it is unlawful "by any means or manner, to pursue, hunt, take, capture [or]  
20 kill" any migratory bird except as permitted by regulation (16 U.S.C. 703-704). The  
21 regulations at 50 CFR 21.11 prohibit the take, possession, import, export, transport,  
22 sale, purchase, barter, or offering of these activities, except under a valid permit or as  
23 permitted in the implementing regulations. The USFWS administers permits to take  
24 migratory birds in accordance with regulations at 50 CFR 21, including, but not limited  
25 to, 50 CFR 21.21 (import and export), 50 CFR 21.22 (capture of birds for banding and  
26 release), 50 CFR 21.23 (scientific collecting and education), 50 CFR 21.27 (special  
27 purpose for rehabilitation, education, and other compelling purposes), 50 CFR 21.28-29  
28 (falconry), 50 CFR 21.30 (raptor propagation), 50 CFR 21.41 (depredation permits).

29 The proposed action under either alternative is not anticipated to create a situation  
30 where a "take" of a migratory bird would reasonably occur. Therefore pursuant to  
31 regulations promulgated under the MBTA, a permit would not be required.

#### 32 **4.21 COMPARISON OF POTENTIAL IMPACT**

33 Table 4.11 summarizes anticipated impacts resulting from each of the four alternatives.

**Table 4.11 Comparison of Potential Impacts**

	<b>Alternative One</b>	<b>Alternative Two</b>	<b>Alternative Three</b>	<b>Alternative Four</b>
Regional Setting and Land Use	not significant	not significant	not significant	no impact
Aesthetic and Visual Resources	no impact	no impact	no impact	no impact
Geology, Soils and Topography	not significant	not significant	no impact	no impact
Hydrology and Water Resources	not significant	not significant	not significant	no impact
Biological Resources	not significant	not significant	not significant	no impact
Floodplains	no impact	no impact	no impact	no impact
Air Quality	not significant	not significant	not significant	no impact
Noise	not significant	not significant	not significant	no impact
Historic and Cultural Resources	no impact	not significant	no impact	no impact
Infrastructure Available	not significant	not significant	not significant	no impact
Traffic and Transportation	not significant	not significant	not significant	no impact
Hazardous Waste, Substances and Materials	not significant	not significant	not significant	no impact
Socioeconomics and Economic Development	not significant	not significant	not significant	no impact
Environmental Justice and Protection of Children EO 12898	no impact	no impact	no impact	no impact
Health and Human Safety	not significant	not significant	no impact	no impact
Cumulative Impacts	not significant	not significant	not significant	no impact

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18 October. Phoenix, AZ: Coffman Associates, Inc.

## 6 LIST OF PREPARERS

Name	Agency/Organization	Discipline/Expertise	Experience	Role in Preparing EA
Charles McGregor	U.S. Army Corps of Engineers	Chemistry	8 years in NEPA and related studies	Technical Manager and EA review
Patience Patterson	U.S. Army Corps of Engineers	Archaeology	29 years in archaeology and cultural resource management	EA review and Section 106 coordination
Michael Collins	Vernadero Consulting	Environmental Planning	12 years NEPA and related studies	Project Manager and Impact Evaluation
Nancy Shelton	Vernadero Consulting	Environmental Planning	5 years NEPA and related studies	Affected Environment and Technical Edit
Chuck Burt	Vernadero Consulting	Biology	30 years biological studies	EA Review
Sharon Elaine Hodges	All Lands	Hazardous Materials	15 years hazardous materials assessment	Existing Hazardous Materials Report
Erin Davis	Entranco	Cultural Resources	5 years cultural resource experience	Class I Records Survey
Charles Parsons	INS Western Region	Geology	25 years of geotechnical and environmental related studies	EA Review

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## 7 LIST OF INDIVIDUALS AND AGENCIES CONSULTED

- |   |   |
|---|---|
| 2 Charles Slaymaker, Ph. D.                 | 23 Arizona State Historic Preservation    |
| 3 Post Archeologist                         | 24 Office                                 |
| 4 U.S. Army Garrison                        | 25 Arizona State Parks                    |
| 5 Fort Huachuca, Arizona                    | 26 1300 West Washington Street            |
|   | 27 Phoenix, Arizona                       |
| 6 Mike Hemeseth                             |   |
| 7 Director of Public Works                  | 28 Jim Hessil                             |
| 8 City of Sierra Vista                      | 29 Wildlife Biologist                     |
| 9 Sierra Vista, Arizona                     | 30 U.S. Army Garrison                     |
|   | 31 Fort Huachuca, Arizona                 |
| 10 Gretchen R. Kent                         |   |
| 11 Physical Scientist / NEPA Coordinator    | 32 Sherry Ruther                          |
| 12 U.S. Army Garrison                       | 33 Arizona Game and Fish Department       |
| 13 Fort Huachuca, Arizona                   | 34 Tucson Regional Office                 |
|   | 35 555 N. Greasewood Road                 |
| 14 United States Department of the Interior | 36 Tucson, Arizona                        |
| 15 U.S. Fish and Wildlife Service           |   |
| 16 Arizona Ecological Services Field Office | 37 Maurice Moore                          |
| 17 2321 W. Royal Palm Road, Suite 103       | 38 USBP Tucson Sector                     |
| 18 Phoenix, Arizona                         | 39 Tucson, Arizona                        |
|   |   |
| 19 Arizona Game and Fish Department         | 40 Del Shadwick                           |
| 20 Tucson Regional Office                   | 41 Real Estate Specialist                 |
| 21 555 N. Greasewood Road                   | 42 Immigration and Naturalization Service |
| 22 Tucson, Arizona                          | 43 Laguna Niguel, California.             |

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## ACRONYMS AND ABBREVIATIONS

2	AAQS	Ambient Air Quality Standards
3	ACS	Aerial Common Sensor
4	ADEQ	Arizona Department of Environmental Quality
5	ADES	Arizona Department of Economic Security
6	ADWR	Arizona Department of Water Resources
7	AGFD	Arizona Game and Fish Department
8	AGL	Above Ground Level
9	AIRFA	American Indian Religious Freedom Act
10	APE	Area of Potential Effect
11	ARTCC	Albuquerque Air Traffic Control Center
12	ATC	Air Traffic Control
13	AVGAS	Aviation Gasoline
14	BEA	Bureau of Economic Analysis
15	BLM	Bureau of Land Management
16	BORSTAR	Border Patrol Search, Trauma and Rescue
17	CEQ	Council on Environmental Quality
18	CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
20	CERL	U.S. Army Corps of Engineers' Construction Engineering Research Laboratory
22	CO	Carbon Monoxide
23	dBA	A-weighted Decibels
24	dB	Decibels
25	DIS ENRD	Directorate of Installation Support, Environmental and Natural Resources Division
27	DOD	Department of Defense
28	DRM	Directorate of Resource Management
29	EA	Environmental Assessment
30	EIS	Environmental Impact Statement
31	EPA	Environmental Protection Agency
32	ESA	Endangered Species Act
33	FAA	Federal Aviation Administration
34	FBO	Fixed Base Operator
35	FICUN	Federal Interagency Committee on Noise
36	FTE	Full Time Equivalent
37	FY	Fiscal Year
38	HAZMAT	Hazardous Materials
39	HAZMART	Centralized facility for handling hazardous materials
40	HMTA	Hazardous Materials Transportation Act
41	HUD	Housing and Urban Development
42	HWMP	Hazardous Waste Management Plan
43	IFR	Instrument Flight Rules

1	INS	Immigration and Naturalization Service
2	LAAF	Libby Army Airfield
3	L <sub>dn</sub>	Day-night Decibel Measurement
4	L <sub>eq</sub>	Equivalent Noise Value
5	L <sub>max</sub>	Maximum Noise Reading
6	MBTU	Million British Thermal Units
7	MG	Million Gallons
8	MOA	Military Operating Area
9	MOGAS	Unleaded Gasoline
10	MSL	Mean Sea Level
11	NCA	National Conservation Area
12	NEPA	National Environmental Policy Act
13	NHL	National Historic Landmark
14	NHPA	National Historic Preservation Act
15	nm	Nautical Miles
16	NOA	Notification of Availability
17	NO <sub>x</sub>	Nitrogen Dioxide
18	NRCS	National Resource Conservation Service
19	O <sub>3</sub>	Ozone
20	PAR	Precision Approach Radar
21	PM <sub>10</sub>	Particulate matter smaller than 10 microns in diameter
22	POL	Petroleum, oil, and lubricants
23	RCRA	Resource Conservation and Recovery Act
24	ROG	Reactive Organic Gases
25	ROI	Region of Influence
26	ROW	Right-of-Way
27	SHPO	State Historic Preservation Officer
28	SIP	State Implementation Plan
29	SO <sub>x</sub>	Sulfur Dioxide
30	SPCCP	Spill Prevention, Control and Countermeasures Plan
31	SVMA	Sierra Vista Municipal Airport
32	TSP	Total Suspended Particulate
33	UDA	Undocumented Alien
34	USACHPPM	U.S. Army Center for Health Promotion and Preventive Medicine
35	USBP	U.S. Border Patrol
36	USFWS	U.S. Fish and Wildlife Service
37	USGS	U.S. Geological Service
38	USPB	Upper San Pedro Basin
39	UXO	Unexploded Ordinance
40	VFR	Visual Flight Rules
41	WWTP	Waste Water Treatment Plant
42	µg/m <sup>3</sup>	Micrograms per cubic meter
43	µm	Micron

## APPENDIX A

### CONSUMPTIVE WATER USE CALCULATIONS

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**Table 1 - On Airport FTE and Facility Operation Water & Wastewater Impact**

Direct Employment	Avg Daily Water Use (Gal)	Annual Water Use (Ac-Ft)	Annual Operations Water Use (Gal)	Net Annual Water Use (Ac-Ft)
8	448	0.501824	5000	0.517169

**Assumptions:**

Avg Daily Water Use at Airport = 56 gal/person/day (Z & H Engineering, Inc. 2000)

Misc annual water use of 5000 gallons for equipment and vehicle washing, etc.

On-site septic system provides for no wastewater recharge opportunity

**Table 2 - Off Airport Direct Employment Water & Wastewater Impact**

Direct Employment (FTE Equivalent)	Avg Daily Water Use (Gal)	Annual Water Use (Ac-Ft)	Avg Daily Wastewater Generation (Gal)	Annual Wastewater (Ac-Ft)	Annual Wastewater Recharged (Ac-Ft)	Net Annual Water Usage (Ac-Ft)
8	864	0.967804	264	0.295718	0.266146	0.701658

**Assumptions:**

Avg Household Size in Cochise County = 2.55 (U.S. Census Bureau 2002)

Avg Daily Water Use off Airport for Direct Employment = 108 gal/person/day (Z & H Engineering, Inc. 2000)

Avg Daily Wastewater Generation in Sierra Vista for Direct Employment = 66 gal/person/day (Z & H Engineering, Inc. 2000)

Recharge = 90% of Wastewater Generation with 10% for losses due to evaporation/transpiration (Z & H Engineering, Inc. 2000)

At least 50% of personnel will live within an area of Sierra Vista covered by the city wastewater treatment system

**Table 3 - Off Airport Induced Population/Economic Activity Water & Wastewater Impact**

Induced Population & Economic Activity	Avg Daily Water Use (Gal)	Annual Water Use (Ac-Ft)	Avg Daily Wastewater Generation (Gal)	Annual Wastewater (Ac-Ft)	Annual Wastewater Recharged (Ac-Ft)	Net Annual Water Usage (Ac-Ft)
37.2	6100.8	6.833774	1860	2.083468	1.875121	4.958653

**Assumptions:**

Induced Economic Activity multiplier is 1.6 x direct employment

Avg Household Size in Cochise County = 2.55 (U.S. Census Bureau 2002)

Avg Daily Water Use off Airport for Induced Population = 164 gal/person/day (Z & H Engineering, Inc. 2000)

Avg Daily Wastewater Generation off Airport for Induced Population = 100 gal/person/day (Z & H Engineering, Inc. 2000)

Recharge = 90% of Wastewater Generation with 10% for losses due to evaporation/transpiration (Z & H Engineering, Inc. 2000)

Water use associated with USBP personnel currently station at LAAF has already been mitigation by Fort Huachuca.

Their off-airport induced population and economic activity were not, and therefore included here

At least 50% of personnel will live within an area of Sierra Vista covered by the city wastewater treatment system

**Table 4 - Combined Net Annual Water Usage**

On Airport Net Annual Water Usage (Ac-Ft)	Off Airport Net Annual Direct Employment Water Usage (Ac-Ft)	Off Airport Net Annual Induced Population Water Usage (Ac-Ft)	Combined Net Annual Water Usage (Ac-Ft)
0.517169	0.701658	4.958653	6.177480

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## APPENDIX B

### AGENCY CORRESPONDENCE

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# AFFIDAVIT OF PUBLICATION

STATE OF ARIZONA )  
 :ss.  
 COUNTY OF COCHISE )

*Kimberly L. Hicks*

KIMBERLY L. HICKS

being first

duly sworn, deposes and says: That (he) (she) is the Agent to the Publisher of the  
 SIERRA VISTA HERALD and the BISBEE DAILY REVIEW newspapers printed and  
 published six days a week in the County of Cochise, State of Arizona, and of  
 general circulation in the cities of Sierra Vista and Bisbee, County of Cochise,  
 State of Arizona and elsewhere, and the hereto attached

## PUBLIC NOTICE

The Immigration and Naturalization Service has prepared a Draft Environmental Assessment (EA) for the Expansion of U.S. Border Patrol Air Operations and Facilities, U.S. Border Patrol Tucson Sector, Arizona in accordance with the National Environmental Policy Act of 1969 and Council for Environmental Quality Regulations (40 CFR Parts 1500-1508). Copies of the Draft EA along with instructions for submitting comments are posted at the Sierra Vista Public Library, 2600 E. Tacoma Street, Sierra Vista, Arizona, and online at: <http://www.swf.usace.army.mil/ins/Pages/PublicReview.cfm>. Comments on the Draft EA are welcome but must be postmarked or faxed by February 22, 2003.  
 PUBLISH: January 19, 20, 21, 2003

DRAFT ENVIRONMENTAL  
 ASSESSMENT EXPANSION  
 US BORDER PATROL AIR  
 OPERATIONS AND  
 FACILITIES

was printed and published correctly in the regular and entire issue of said SIERRA

VISTA HERALD and BISBEE DAILY REVIEW for 3 issues, that the first

was made on the 19th day of JANUARY 20 03

and the last publication thereof was made on the 21st day of

JANUARY 20 03 that said publication

was made on each of the following dates, to wit:

01/19/03  
 01/20/03  
 01/21/03

Request of

VERANDO CONSULTING

**Sierra Vista Herald**  
**Bisbee Daily Review**

By

Subscribed sworn to before me this 21st day of JANUARY

20

03



Notary Public in and for the County of Cochise, State of Arizona

My Commission Expires:

5 / 1

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REPLY TO  
ATTENTION OF

**DEPARTMENT OF THE ARMY**  
**FORT WORTH DISTRICT, CORPS OF ENGINEERS**  
**P.O. BOX 17300, 819 TAYLOR STREET**  
**FORT WORTH, TEXAS 76102-0300**

January 21, 2003

Planning, Environmental and Regulatory Division

**SUBJECT: Draft Environmental Assessment for Expansion of US Border Patrol (USBP) Air Operations and Facilities - Sierra Vista Municipal Airport (SVMA), Sierra Vista, Arizona**

The Honorable Delia Carlyle, Chairperson  
Ak Chin Indian Community  
42507 W. Peters & Nall Road  
Maricopa, Arizona 85239

Dear Chairperson Carlyle:

In a letter dated August 19, 2002, regarding the Section 106 procedures on the project mentioned above, we asked the Arizona State Historic Preservation Officer (SHPO) to concur with our determination of "No Historic Properties Affected." We received that concurrence on September 12, 2002.

We noted also that as soon as the draft EA became available, we would provide you with a copy for your immediate review and comment. The public comment period for this document will end on February 22, 2003. We would appreciate any comments you have on this document and the project. Thank you for your participation in this public process.

If you require any additional information please contact Ms. Patience Patterson of my staff at (817) 886-1723.

Sincerely,

A handwritten signature in black ink, appearing to read "William Fickel, Jr.", is written over the typed name.

William Fickel, Jr.  
Chief, Planning, Environmental  
and Regulatory Division

Enclosure



REPLY TO  
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**FORT WORTH DISTRICT, CORPS OF ENGINEERS**  
**P.O. BOX 17300, 819 TAYLOR STREET**  
**FORT WORTH, TEXAS 76102-0300**

January 21, 2003

Planning, Environmental and Regulatory Division

**SUBJECT: Draft Environmental Assessment for Expansion of US Border Patrol (USBP) Air Operations and Facilities - Sierra Vista Municipal Airport (SVMA), Sierra Vista, Arizona**

The Honorable Ruey Darrow, Chairwoman  
ATTN: Mr. Leland Darrow, Cultural Resources Manager  
Fort Sill Apache Tribe  
Route 2, Box 121  
Apache, OK 73006

Dear Chairwoman Darrow:

In a letter dated August 19, 2002, regarding the Section 106 procedures on the project mentioned above, we asked the Arizona State Historic Preservation Officer (SHPO) to concur with our determination of "No Historic Properties Affected." We received that concurrence on September 12, 2002.

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**P.O. BOX 17300, 819 TAYLOR STREET**  
**FORT WORTH, TEXAS 76102-0300**

January 21, 2003

Planning, Environmental and Regulatory Division

**SUBJECT: Draft Environmental Assessment for Expansion of US Border Patrol (USBP) Air Operations and Facilities - Sierra Vista Municipal Airport (SVMA), Sierra Vista, Arizona**

The Honorable Donald Antone, Sr., Governor  
ATTN: Mr. Barnaby V. Lewis  
Gila River Indian Community  
P.O. Box 97  
Sacaton, Arizona 85247

Dear Governor Antone:

In a letter dated August 19, 2002, regarding the Section 106 procedures on the project mentioned above, we asked the Arizona State Historic Preservation Officer (SHPO) to concur with our determination of "No Historic Properties Affected." We received that concurrence on September 12, 2002.

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**FORT WORTH, TEXAS 76102-0300**

January 21, 2003

Planning, Environmental and Regulatory Division

**SUBJECT: Draft Environmental Assessment for Expansion of US Border Patrol (USBP) Air Operations and Facilities - Sierra Vista Municipal Airport (SVMA), Sierra Vista, Arizona**

Mrs. Donna Stern-McFadden  
Tribal Historic Preservation Officer  
Mescalero Apache Tribe  
P.O. Box 227  
Mescalero, NM 88340

Dear Mrs. Stern-McFadden:

In a letter dated August 19, 2002, regarding the Section 106 procedures on the project mentioned above, we asked the Arizona State Historic Preservation Officer (SHPO) to concur with our determination of "No Historic Properties Affected." We received that concurrence on September 12, 2002.

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FORT WORTH DISTRICT, CORPS OF ENGINEERS  
P.O. BOX 17300, 819 TAYLOR STREET  
FORT WORTH, TEXAS 76102-0300

January 21, 2003

Planning, Environmental and Regulatory Division

SUBJECT: Draft Environmental Assessment for Expansion of US Border Patrol (USBP) Air Operations and Facilities - Sierra Vista Municipal Airport (SVMA), Sierra Vista, Arizona

The Honorable Benito Valencia, Chairman  
Pascua Yaqui Tribe of Arizona  
7474 S. Camino De Oeste  
Tucson, Arizona 85746

Dear Chairman Valencia:

In a letter dated August 19, 2002, regarding the Section 106 procedures on the project mentioned above, we asked the Arizona State Historic Preservation Officer (SHPO) to concur with our determination of "No Historic Properties Affected." We received that concurrence on September 12, 2002.

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**FORT WORTH, TEXAS 76102-0300**

January 21, 2003

Planning, Environmental and Regulatory Division

**SUBJECT: Draft Environmental Assessment for Expansion of US Border Patrol (USBP) Air Operations and Facilities - Sierra Vista Municipal Airport (SVMA), Sierra Vista, Arizona**

The Honorable Ivan Makil, President  
Salt River Pima-Maricopa Indian Community  
10005 E. Osborne Road  
Scottsdale, Arizona 85256

Dear President Makil:

In a letter dated August 19, 2002, regarding the Section 106 procedures on the project mentioned above, we asked the Arizona State Historic Preservation Officer (SHPO) to concur with our determination of "No Historic Properties Affected." We received that concurrence on September 12, 2002.

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January 21, 2003

Planning, Environmental and Regulatory Division

**SUBJECT: Draft Environmental Assessment for Expansion of US Border Patrol (USBP) Air Operations and Facilities - Sierra Vista Municipal Airport (SVMA), Sierra Vista, Arizona**

Dr. John Welch  
Tribal Historic Preservation Officer  
White Mountain Apache Tribe  
P.O. Box 700  
Whiteriver, Arizona 85941

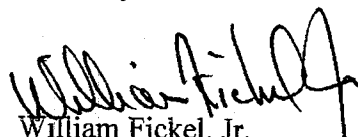
Dear Dr. Welch:

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Sincerely,

  
William Fickel, Jr.  
Chief, Planning, Environmental  
and Regulatory Division

Enclosure

Copy furnished w/o enclosure

Charles H. Parsons  
Regional Environmental Officer  
Immigration and Naturalization Service  
Administrative Center Laguna  
P.O. Box 30080 Laguna Niguel, CA 92607-0080



REPLY TO  
ATTENTION OF

**DEPARTMENT OF THE ARMY**  
FORT WORTH DISTRICT, CORPS OF ENGINEERS  
P.O. BOX 17300, 819 TAYLOR STREET  
FORT WORTH, TEXAS 76102-0300

January 21, 2003

Planning, Environmental and Regulatory Division

**SUBJECT: Draft Environmental Assessment for Expansion of US Border Patrol (USBP) Air Operations and Facilities - Sierra Vista Municipal Airport (SVMA), Sierra Vista, Arizona**

The Honorable Malcolm B. Bowekaty, Governor  
ATTN: Mr. Jonathan Damp, Zuni Heritage and Preservation  
Zuni Pueblo  
P.O. Box 339  
Zuni, New Mexico 87327

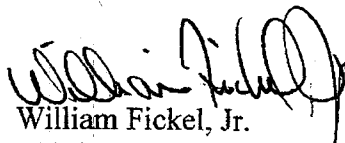
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FORT WORTH, TEXAS 76102-0300

January 21, 2003

Planning, Environmental and Regulatory Division

SUBJECT: Draft Environmental Assessment for Expansion of US Border Patrol (USBP) Air Operations and Facilities - Sierra Vista Municipal Airport (SVMA), Sierra Vista, Arizona

The Honorable Edward D. Manuel, Chairman  
ATTN: Mr. Peter Steere, Cultural Resources Manager  
Tohono O'odham Nation of Arizona  
P.O. Box 837  
Sells, Arizona 85634

Dear Chairman Manuel:

In a letter dated August 19, 2002, regarding the Section 106 procedures on the project mentioned above, we asked the Arizona State Historic Preservation Officer (SHPO) to concur with our determination of "No Historic Properties Affected." We received that concurrence on September 12, 2002.

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FORT WORTH, TEXAS 76102-0300

January 21, 2003

Planning, Environmental and Regulatory Division

SUBJECT: Draft Environmental Assessment for Expansion of US Border Patrol (USBP) Air Operations and Facilities - Sierra Vista Municipal Airport (SVMA), Sierra Vista, Arizona

The Honorable Raymond Stanley, Chairman  
ATTN: Ms. Vernelda Grant  
San Carlos Apache Tribe  
P.O. Box 0  
San Carlos, AZ 85550

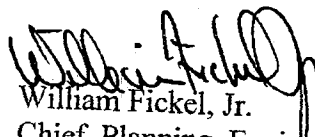
Dear Chairman Stanley:

In a letter dated August 19, 2002, regarding the Section 106 procedures on the project mentioned above, we asked the Arizona State Historic Preservation Officer (SHPO) to concur with our determination of "No Historic Properties Affected." We received that concurrence on September 12, 2002.

We noted also that as soon as the draft EA became available, we would provide you with a copy for your immediate review and comment. The public comment period for this document will end on February 22, 2003. We would appreciate any comments you have on this document and the project. Thank you for your participation in this public process.

If you require any additional information please contact Ms. Patience Patterson of my staff at (817) 886-1723.

Sincerely,

  
William Fickel, Jr.  
Chief, Planning, Environmental  
and Regulatory Division

Enclosure

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# United States Department of the Interior

U.S. Fish and Wildlife Service  
Arizona Ecological Services Field Office  
2321 West Royal Palm Road, Suite 103  
Phoenix, Arizona 85021-4951

Telephone: (602) 242-0210 Fax: (602) 242-2513



In Reply Refer to:

AESO/SE  
2-21-02-I-264

July 23, 2002

Mr. Michael Collins  
Vernadero Consulting  
7349 Via Paseo Del Sur, Suite 515-301  
Scottsdale, Arizona 85258

RE: U.S. Border Patrol Air Operations Facility Located at Sierra Vista Municipal Airport

Dear Mr. Collins:

This letter responds to your recent request for information on threatened or endangered species, or those that are proposed to be listed as such under the Endangered Species Act of 1973, as amended (Act), which may occur in your project area. The Arizona Ecological Service Field Office has posted lists of the endangered, threatened, proposed, and candidate species occurring in each of Arizona's 15 counties on the Internet. Please refer to the following web page for species information in the county where your project occurs: <http://arizonaes.fws.gov>

If you do not have access to the Internet or have difficulty obtaining a list, please contact our office and we will mail or fax you a list as soon as possible.

After opening the web page, find Arizona County/Species List on the main page. Then click on the county of interest. The arrows on the left will guide you through information on species that are listed, proposed, candidates, or have conservation agreements. Here you will find information on the species' status, a physical description, all counties where the species occurs, habitat, elevation, and some general comments. Additional information can be obtained by going back to the main page. On the left side of the screen, click on Document Library, then click on Documents by Species, then click on the name of the species of interest to obtain General Species Information, or other documents when that may be available. Click on the cactus icon to view the desired document.

Please note that your project area may not necessarily include all or any of these species. The information provided includes general descriptions, habitat requirements, and other information for each species on the list. Under the General Species Information, citations for the of Federal Register (FR) are included for each listed and proposed species. The FR is available at most public libraries. This information should assist you in determining which species may or may not occur within your project area. Site-specific surveys could also be helpful and may be needed to verify the presence or absence of a species or its habitat as required for the evaluation of proposed project-related impacts.

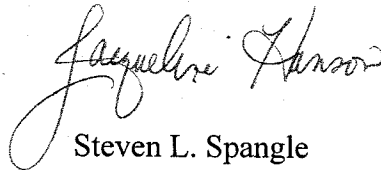
Endangered and threatened species are protected by Federal law and must be considered prior to project development. If the action agency determines that listed species or critical habitat may be adversely affected by a federally funded, permitted, or authorized activity, the action agency will need to request formal consultation with us. If the action agency determines that the planned action may jeopardize a proposed species or destroy or adversely modify proposed critical habitat, the action agency will need to enter into a section 7 conference. The county list may also contain candidate species. Candidate species are those for which there is sufficient information to support a proposal for listing. Although candidate species have no legal protection under the Act, we recommend that they be considered in the planning process in the event that they become listed or proposed for listing prior to project completion.

If any proposed action occurs in or near areas with trees and shrubs growing along watercourses, known as riparian habitat, we recommend the protection of these areas. Riparian areas are critical to biological community diversity and provide linear corridors important to migratory species. In addition, if the project will result in the deposition of dredged or fill materials into waterways, we recommend you contact the Army Corps of Engineers which regulates these activities under Section 404 of the Clean Water Act.

The State of Arizona protects some plant and animal species not protected by Federal law. We recommend you contact the Arizona Game and Fish Department and the Arizona Department of Agriculture for State-listed or sensitive species in your project area.

For future projects, you do not need to contact our office to obtain a project number. However, for additional communications regarding this project, please refer to consultation number 2-21-02-I-264. We appreciate your efforts to identify and avoid impacts to listed and sensitive species in your project area. If we may be of further assistance, please feel free to contact Tom Gatz for projects in northern Arizona or along the Colorado River (x240) or Sherry Barrett for projects in southern Arizona.

Sincerely,



Steven L. Spangle  
Acting Field Supervisor

cc: John Kennedy, Habitat Branch, Arizona Game and Fish Department, Phoenix, AZ  
Assistant Field Supervisor, Fish and Wildlife Service, Tucson, AZ

LISTED, PROPOSED, AND CANDIDATE SPECIES FOR THE FOLLOWING COUNTY:

COCHISE

6/4/2002

## 1)LISTED

TOTAL= 22

NAME: CANELO HILLS LADIES' TRESSES

*SPIRANTHES DELITESCENS*

STATUS: ENDANGERED

CRITICAL HAB No RECOVERY PLAN: No CFR: 82 FR 665, 01-06-97

DESCRIPTION: SLENDER ERECT MEMBER OF THE ORCHID FAMILY (ORCHIDACEAE).

FLOWER: STALK 60 CM TALL, MAY CONTAIN 40 WHITE FLOWERS

SPIRALLY ARRANGED ON THE FLOWERING STALK.

ELEVATION

RANGE: about 5000 FT.

COUNTIES: COCHISE, SANTA CRUZ

HABITAT: FINELY GRAINED, HIGHLY ORGANIC, SATURATED SOILS OF CIENEGAS

POTENTIAL HABITAT OCCURS IN SONORA, MEXICO, BUT NO POPULATIONS HAVE BEEN FOUND.

NAME: COCHISE PINCUSHION CACTUS

*CORYPHANTHA ROBBINSORUM*

STATUS: THREATENED

CRITICAL HAB No RECOVERY PLAN: Yes CFR: 61 FR 952, 1-9-1986

DESCRIPTION: A SMALL UNBRANCHED CACTUS WITH NO CENTRAL SPINES AND 11-17

WHITE RADIAL SPINES. THE BELL-SHAPED FLOWERS ARE BORNE ON

THE ENDS OF TUBERCLES (Protrusions). FLOWERS: BELL SHAPED,

PALE YELLOW-GREEN. FRUITS: ORANGE-RED TO RED

ELEVATION

RANGE: &gt;4200 FT.

COUNTIES: COCHISE AND SONORA, MEXICO

HABITAT: SEMIDESERT GRASSLAND WITH SMALL SHRUBS, AGAVE, OTHER CACTI, AND GRAMA GRASS.

GROWS ON GRAY LIMESTONE HILLS.

NAME: HUACHUCA WATER UMBEL

*LILAEOPSIS SCHAFFNERIANA ssp RECURVA*

STATUS: ENDANGERED

CRITICAL HAB Yes RECOVERY PLAN: No CFR: 82 FR 665, 01-06-97

DESCRIPTION: HERBACEOUS, SEMI-AQUATIC PERENNIAL IN THE PARSLEY FAMILY

(UMBELLIFERAE) WITH SLENDER ERECT, HOLLOW, LEAVES THAT GROW

FROM THE NODES OF CREEPING RHIZOMES. FLOWER: 3 TO 10

FLOWERED UMBELS ARISE FROM ROOT NODES.

ELEVATION

RANGE: 3500-6500 FT.

COUNTIES: PIMA, SANTA CRUZ, COCHISE

HABITAT: CIENEGAS, PERENNIAL LOW GRADIENT STREAMS, WETLANDS

AND IN ADJACENT SONORA, MEXICO, WEST OF THE CONTINENTAL DIVIDE. POPULATIONS ALSO ON FORT HUACHUCA MILITARY RESERVATION. CRITICAL HABITAT IN COCHISE AND SANTA CRUZ COUNTIES (63 FR 37441)

## LISTED, PROPOSED, AND CANDIDATE SPECIES FOR THE FOLLOWING COUNTY:

COCHISE

6/4/2002

NAME: NEW MEXICAN RIDGE-NOSED RATTLESNAKE *CROTALUS WILLARDI OBSCURUS*

STATUS: THREATENED

CRITICAL HAB Yes RECOVERY PLAN: Yes CFR: 43 FR 34479, 04-04-1978

DESCRIPTION: SMALL 12-24 INCHES, SECRETIVE GRAYISH-BROWN WITH DISTINCT  
RIDGE ON THE END OF THE SNOUT. THE DORSAL SURFACE HAS  
OBSCURE, IRREGULARLY SPACED WHITE CROSSBARS EDGED WITH  
BROWN (NOT A BOLD PATTERN).

ELEVATION

RANGE: 5000-8600 FT.

COUNTIES: COCHISE

HABITAT: PRIMARILY CANYON BOTTOMS IN PINE-OAK COMMUNITIES

THE SUBSPECIES HAS BEEN DOCUMENTED IN THE PELONCILO MOUNTAINS IN ARIZONA. ONLY THREE KNOWN  
RECORDS FROM ARIZONA. ALSO OCCURS IN ANIMAS MOUNTAINS OF NEW MEXICO AND SIERRA SAN LUIS IN  
SONORACHIHUAHUA.

## NAME: LESSER LONG-NOSED BAT

*LEPTONYCTERIS CURASOAE YERBABUENAE*

STATUS: ENDANGERED

CRITICAL HAB No RECOVERY PLAN: Yes CFR: 53 FR 38458, 09-30-88

DESCRIPTION: ELONGATED MUZZLE, SMALL LEAF NOSE, AND LONG TONGUE.  
YELLOWISH BROWN OR GRAY ABOVE AND CINNAMON BROWN BELOW.  
TAIL MINUTE AND APPEARS TO BE LACKING. EASILY DISTURBED.

ELEVATION

RANGE: &lt;6000 FT.

COUNTIES: COCHISE, GILA, GRAHAM, GREENLEE, MARICOPA, PIMA, PINAL, SANTA CRUZ, YAVAPAI

HABITAT: DESERT SCRUB HABITAT WITH AGAVE AND COLUMNAR CACTI PRESENT AS FOOD PLANTS

DAY ROOSTS IN CAVES AND ABANDONED TUNNELS. FORAGES AT NIGHT ON NECTAR, POLLEN, AND FRUIT OF  
PANICULATE AGAVES AND COLUMNAR CACTI. THIS SPECIES IS MIGRATORY AND IS PRESENT IN ARIZONA,  
USUALLY FROM APRIL TO SEPTEMBER AND SOUTH OF THE BORDER THE REMAINDER OF THE YEAR.

## NAME: MEXICAN GRAY WOLF

*CANIS LUPUS BAILEYI*

STATUS: ENDANGERED

CRITICAL HAB No RECOVERY PLAN: Yes CFR: 32 FR 4001, 03-11-67; 43  
FR 1912, 03-09-78

DESCRIPTION: LARGE DOG-LIKE CARNIVORE WITH VARYING COLOR, BUT USUALLY A  
SHADE OF GRAY. DISTINCT WHITE LIP LINE AROUND MOUTH. WEIGH  
60-90 POUNDS.

ELEVATION

RANGE: 4,000-12,000 FT.

COUNTIES: APACHE, COCHISE, GREENLEE, PIMA, SANTA CRUZ, COCONINO

HABITAT: CHAPPARAL, WOODLAND, AND FORESTED AREAS. MAY CROSS DESERT AREAS

HISTORIC RANGE IS CONSIDERED TO BE LARGER THAN THE COUNTIES LISTED ABOVE. UNCONFIRMED REPORTS  
OF INDIVIDUALS IN THE SOUTHERN PART OF THE STATE (COCHISE, PIMA, SANTA CRUZ) CONTINUE TO BE  
RECEIVED. INDIVIDUALS MAY STILL PERSIST IN MEXICO. EXPERIMENTAL NONESSENTIAL POPULATION  
INTRODUCED IN THE BLUE PRIMITIVE AREA OF GREENLEE, APACHE, AND COCONINO COUNTIES.

## LISTED, PROPOSED, AND CANDIDATE SPECIES FOR THE FOLLOWING COUNTY:

COCHISE

6/4/2002

## NAME: OCELOT

LEOPARDUS (=FELIS) PARDALIS

STATUS: ENDANGERED

CRITICAL HAB No RECOVERY PLAN: Yes CFR: 47 FR 31670; 07-21-82

DESCRIPTION: MEDIUM-SIZED SPOTTED CAT WHOSE TAIL IS ABOUT 1/2 THE LENGTH OF HEAD AND BODY. YELLOWISH WITH BLACK STREAKS AND STRIPES RUNNING FROM FRONT TO BACK. TAIL IS SPOTTED AND FACE IS LESS HEAVILY STREAKED THAN THE BACK AND SIDES.

ELEVATION  
RANGE: <8000 FT.

COUNTIES: SANTA CRUZ, PIMA, COCHISE

HABITAT: HUMID TROPICAL &amp; SUB-TROPICAL FORESTS, SAVANNAHS, AND SEMI-ARID THORNSCRUB.

MAY PERSIST IN PARTLY-CLEARED FORESTS, SECOND-GROWTH WOODLAND, AND ABANDONED CULTIVATION REVERTED TO BRUSH. UNIVERSAL COMPONENT IS PRESENCE OF DENSE COVER. UNCONFIRMED REPORTS OF INDIVIDUALS IN THE SOUTHERN PART OF THE STATE CONTINUE TO BE RECEIVED.

## NAME: BEAUTIFUL SHINER

CYPRINELLA FORMOSA

STATUS: THREATENED

CRITICAL HAB Yes RECOVERY PLAN: Yes CFR: 49 FR 34490, 8-31-1984

DESCRIPTION: SMALL (2.5 INCHES) SHINY MINNOW AND VERY SIMILAR TO RED SHINER. MALES COLORFUL DURING BREEDING (YELLOW-ORANGE OR ORANGE ON CAUDAL AND LOWER FINS AND BLUISH BODY.

ELEVATION  
RANGE: <4500 FT.

COUNTIES: COCHISE

HABITAT: SMALL TO MEDIUM SIZED STREAMS AND PONDS WITH SAND, GRAVEL, AND ROCK BOTTOMS.

VIRTUALLY EXTIRPATED IN THE UNITED STATES, WITH THE EXCEPTION OF A FEW ISOLATED POPULATIONS ON NATIONAL WILDLIFE REFUGES AND IN MEXICO, SAME CRITICAL HABITAT AS YAQUI CHUB AND CATFISH (SEE 49 FR 34490, 08-31-1984).

## \* NAME: LOACH MINNOW

TIAROGA COBITIS

STATUS: THREATENED

CRITICAL HAB Yes RECOVERY PLAN: Yes CFR: 51 FR 39468, 10-28-1986;  
59 FR 10898, 03-08-1994;

DESCRIPTION: SMALL (<3 INCHES LONG) SLENDER, ELONGATED FISH, OLIVE COLORED WITH DIRTY WHITE SPOTS AT THE BASE OF THE DORSAL AND CAUDAL FINS. BREEDING MALES VIVID RED ON MOUTH AND BASE OF FINS

ELEVATION  
RANGE: <3000 FT.

COUNTIES: PINAL, GRAHAM, GREENLEE, GILA, APACHE, NAVAJO, YAVAPAI, COCHISE, PIMA

HABITAT: BENTHIC SPECIES OF SMALL TO LARGE PERENNIAL STREAMS WITH SWIFT SHALLOW WATER OVER COBBLES & GRAVEL. RECURRENT FLOODING AND NATURAL HYDROGRAPH IMPORTANT.

PRESENTLY FOUND IN ARAVAIPA CREEK, BLUE RIVER, CAMPBELL BLUE CREEK, SAN FRANCISCO RIVER, DRY BLUE CREEK, TULAROSA RIVER, EAST-WEST AND MIDDLE FORKS OF THE GILA RIVER, EAGLE CREEK, EAST FORK, BLACK RIVER, AND THE MAINSTEM UPPER GILA RIVER. CRITICAL HABITAT WAS REMOVED IN MARCH 1998; BUT RE-PROPOSED DEC 1999 AND FINALIZED APRIL 2000. SPECIES ALSO FOUND IN CATRON, GRANT, AND HIDALGO COUNTIES IN NEW MEXICO. COUNTIES WITH CRITICAL HABITAT PRESENTLY CONTAIN NO KNOWN EXISTING POPULATIONS OF LOACH MINNOW.

## LISTED, PROPOSED, AND CANDIDATE SPECIES FOR THE FOLLOWING COUNTY:

COCHISE

6/4/2002

## NAME: SPIKEDACE

MEDA FULGIDA

STATUS: THREATENED

CRITICAL HAB Yes RECOVERY PLAN: Yes CFR: 51 FR 23759, 07-01-1986;

DESCRIPTION: SMALL (<3 INCHES) SLIM WITH SILVERY SIDES & 'SPINE' ON DORSAL  
FIN. BREEDING MALES BRASSY GOLDEN COLOR

65 FR 24327, 04-25-2000

ELEVATION

RANGE: &lt;5000 FT.

COUNTIES: GRAHAM, PINAL, GREENLEE, YAVAPAI, APACHE\*, COCHISE\*, GILA\*, NAVAJO, PIMA\*

HABITAT: MODERATE TO LARGE PERENNIAL STREAMS WITH GRAVEL COBBLE SUBSTRATES AND MODERATE TO  
SWIFT VELOCITIES OVER SAND AND GRAVEL SUBSTRATES. RECURRENT FLOODING AND NATURALPRESENTLY FOUND IN ARAVAIPA CREEK, EAGLE CREEK, VERDE RIVER, EAST-WEST- MAIN AND MIDDLE FORKS OF  
THE GILA RIVER IN NEW MEXICO, AND GILA RIVER FROM SAN PEDRO RIVER TO ASHURST HAYDEN DAM. CRITICAL  
HABITAT WAS REMOVED IN MARCH 1998, BUT RE-PROPOSED DEC 1999 AND FINALIZED IN APRIL 2000. SPECIES  
ALSO FOUND IN CATRON, GRANT, AND HIDALGO COUNTIES IN NEW MEXICO. \*COUNTIES WITH CRITICAL HABITAT  
PRESENTLY CONTAIN NO KNOWN EXISTING POPULATIONS OF SPIKEDACE.

## NAME: YAQUI CATFISH

ICTALURUS PRICEI

STATUS: THREATENED

CRITICAL HAB Yes RECOVERY PLAN: Yes CFR: 49 FR 34490, 08-31-1984

DESCRIPTION: SIMILAR TO CHANNEL CATFISH (Ictalurus punctatus) EXCEPT ANAL FIN  
BASE IS SHORTER AND THE DISTAL MARGIN OF THE ANAL FIN IS  
BROADLY ROUNDED WITH 23-25 SOFT RAYS. BODY USUALLY  
PROFUSELY SPECKLED.

ELEVATION

RANGE: 4000-5000 FT.

COUNTIES: COCHISE

HABITAT: MODERATE TO LARGE STREAMS WITH SLOW CURRENT OVER SAND AND ROCK BOTTOMS

CRITICAL HABITAT ALL AQUATIC HABITATS IN THE MAIN PORTION OF SAN BERNARDINO NATIONAL WILDLIFE  
REFUGE

## NAME: YAQUI CHUB

GILA PURPUREA

STATUS: ENDANGERED

CRITICAL HAB Yes RECOVERY PLAN: Yes CFR: 49 FR 34490, 08-31-1984

DESCRIPTION: MEDIUM SIZED MINNOW (<6 INCHES) DARK COLORED, LIGHTER BELOW.  
DARK TRIANGULAR CAUDAL SPOT

ELEVATION

RANGE: 4000-6000 FT.

COUNTIES: COCHISE (AZ), MEXICO

HABITAT: DEEP POOLS OF SMALL STREAMS, POOLS, OR PONDS NEAR UNDERCUT BANKS.

CRITICAL HABITAT INCLUDES ALL AQUATIC HABITATS OF THE MAIN PORTION SAN BERNARDINO NATIONAL WILDLIFE  
REFUGE.

LISTED, PROPOSED, AND CANDIDATE SPECIES FOR THE FOLLOWING COUNTY:

COCHISE

6/4/2002

NAME: YAQUI TOPMINNOW

*POECILIOPSIS OCCIDENTALIS SONORIENSIS*

STATUS: ENDANGERED

CRITICAL HAB No RECOVERY PLAN: Yes CFR: 32 FR 4001, 03-11-1967

DESCRIPTION: SMALL (2 INCHES) TOPMINNOW GUPPY-LIKE, LIVE BEARING, LACKING  
DARK SPOTS. BREEDING MALES JET BLACK WITH YELLOW FINS.

ELEVATION

RANGE: 44500 FT.

COUNTIES: COCHISE

HABITAT: SMALL TO MODERATE SIZED STREAMS, SPRINGS, &amp; CIENEGAS GENERALLY IN SHALLOWS

NAME: BALD EAGLE

*HALIAEETUS LEUCOCEPHALUS*

STATUS: THREATENED

CRITICAL HAB No RECOVERY PLAN: Yes CFR: 80 FR 35999, 07-12-85

DESCRIPTION: LARGE. ADULTS HAVE WHITE HEAD AND TAIL. HEIGHT 28 - 38";  
WINGSPAN 66 - 96". 1-4 YRS DARK WITH VARYING DEGREES OF  
MOTTLED BROWN PLUMAGE. FEET BARE OF FEATHERS.

ELEVATION

RANGE: VARIES FT.

COUNTIES: YUMA, LA PAZ, MOHAVE, YAVAPAI, MARICOPA, PINAL, COCONINO, NAVAJO, APACHE, SANTA CRUZ, PIMA,  
GILA, GRAHAM, COCHISE

HABITAT: LARGE TREES OR CLIFFS NEAR WATER (RESERVOIRS, RIVERS AND STREAMS) WITH ABUNDANT PREY

SOME BIRDS ARE NESTING RESIDENTS WHILE A LARGER NUMBER WINTERS ALONG RIVERS AND RESERVOIRS.  
AN ESTIMATED 200 TO 300 BIRDS WINTER IN ARIZONA. ONCE ENDANGERED (32 FR 4001, 03-11-1967; 43 FR 5233, 02-  
14-78) BECAUSE OF REPRODUCTIVE FAILURES FROM PESTICIDE POISONING AND LOSS OF HABITAT, THIS  
SPECIES WAS DOWN LISTED TO THREATENED ON AUGUST 11, 1995. ILLEGAL SHOOTING, DISTURBANCE, LOSS OF  
HABITAT CONTINUES TO BE A PROBLEM. SPECIES HAS BEEN PROPOSED FOR DELISTING (84 FR 38454) BUT STILL  
RECEIVES FULL PROTECTION UNDER ESA.

NAME: BROWN PELICAN

*PELECANUS OCCIDENTALIS CALIFORNICUS*

STATUS: ENDANGERED

CRITICAL HAB No RECOVERY PLAN: Yes CFR: 35 FR 16047, 10-13-70; 35  
FR 18330, 12-02-70DESCRIPTION: LARGE DARK GRAY-BROWN WATER BIRD WITH A POUCH UNDERNEATH  
LONG BILL AND WEBBED FEET. ADULTS HAVE A WHITE HEAD AND  
NECK, BROWNISH BLACK BREAST, AND SILVER GRAY UPPER PARTS.

ELEVATION

RANGE: VARIES FT.

COUNTIES: APACHE, COCHISE, COCONINO, GILA, GRAHAM, GREENLEE LA PAZ, MARICOPA, MOHAVE, NAVAJO, PIMA,  
PINAL, SANTA CRUZ, YAVAPAI, YUMA

HABITAT: COASTAL LAND AND ISLANDS; ARIZONA LAKES AND RIVERS

SUBSPECIES IS FOUND ON PACIFIC COAST AND IS ENDANGERED DUE TO PESTICIDES. IT IS AN UNCOMMON  
TRANSIENT IN ARIZONA ON MANY ARIZONA LAKES AND RIVERS. INDIVIDUALS WANDER UP FROM MEXICO IN  
SUMMER AND FALL. NO BREEDING RECORDS IN ARIZONA.

## LISTED, PROPOSED, AND CANDIDATE SPECIES FOR THE FOLLOWING COUNTY:

COCHISE

6/4/2002

NAME: CACTUS FERRUGINOUS PYGMY-OWL

*GLAUCIDIUM BRASILIANUM CACTORUM*

STATUS: ENDANGERED

CRITICAL HAB No RECOVERY PLAN: No CFR: 62 FR 10730, 3-10-97

DESCRIPTION: SMALL (APPROX. 7"), DIURNAL OWL REDDISH BROWN OVERALL WITH  
CREAM-COLORED BELLY STREAKED WITH REDDISH BROWN. SOME  
INDIVIDUALS ARE GRAYISH BROWN

ELEVATION

RANGE: &lt;4000 FT.

COUNTIES: MARICOPA, YUMA, SANTA CRUZ, GRAHAM, GREENLEE, PIMA, PINAL, GILA, COCHISE

HABITAT: MATURE COTTONWOOD/WILLOW, MESQUITE BOSQUES, AND SONORAN DESERT SCRUB

RANGE LIMIT IN ARIZONA IS FROM NEW RIVER (NORTH) TO GILA BOX (EAST) TO CABEZA PRIETA MOUNTAINS (WEST). ONLY A FEW DOCUMENTED SITES WHERE THIS SPECIES PERSISTS ARE KNOWN. ADDITIONAL SURVEYS ARE NEEDED. CRITICAL HABITAT WAS VACATED BY THE U.S. DISTRICT COURT FOR THE DISTRICT OF ARIZONA (9/19/01) AND REMANDED TO THE SERVICE FOR FURTHER CONSIDERATION.

NAME: MEXICAN SPOTTED OWL

*STRIX OCCIDENTALIS LUCIDA*

STATUS: THREATENED

CRITICAL HAB Yes RECOVERY PLAN: Yes CFR: 66 FR 14678, 04-11-01; 68

DESCRIPTION: MEDIUM SIZED WITH DARK EYES AND NO EAR TUFTS. BROWNISH AND  
HEAVILY SPOTTED WITH WHITE OR BEIGE.

FR 8530, 2/1/01

ELEVATION

RANGE: 4100-9000 FT.

COUNTIES: MOHAVE, COCONINO, NAVAJO, APACHE, YAVAPAI, GRAHAM, GREENLEE, COCHISE, SANTA CRUZ, PIMA,  
PINAL, GILA, MARICOPA

HABITAT: NESTS IN CANYONS AND DENSE FORESTS WITH MULTI-LAYERED FOLIAGE STRUCTURE

GENERALLY NESTS IN OLDER FORESTS OF MIXED CONIFER OR PONDEROSA PINE/GAMBEL OAK TYPE, IN CANYONS, AND USE VARIETY OF HABITATS FOR FORAGING. SITES WITH COOL MICROCLIMATES APPEAR TO BE OF IMPORTANCE OR ARE PREFERRED. CRITICAL HABITAT WAS REMOVED IN 1998 BUT RE-PROPOSED IN JULY 2000 AND FINALIZED IN FEB 2001 FOR APACHE, COCHISE, COCONINO, GRAHAM, MOHAVE, PIMA COUNTIES; ALSO IN NEW MEXICO, UTAH, AND COLORADO.

NAME: NORTHERN APLOMADO FALCON

*FALCO FEMORALIS SEPTENTRIONALIS*

STATUS: ENDANGERED

CRITICAL HAB No RECOVERY PLAN: Yes CFR: 51 FR 6686, 01-25-86

DESCRIPTION: RUFOUS UNDERPARTS, GRAY BACK, LONG BANDED TAIL, AND A  
DISTINCT BLACK AND WHITE FACIAL PATTERN. SMALLER THAN  
PEREGRINE LARGER THAN KESTREL. BREEDS BETWEEN MARCH- JUNE

ELEVATION

RANGE: 3500-9000 FT.

COUNTIES: COCHISE, SANTA CRUZ

HABITAT: GRASSLAND AND SAVANNAH

SPECIES FORMERLY NESTED IN SOUTHWESTERN US. NOW OCCURS AS AN ACCIDENTAL. GOOD HABITAT HAS LOW GROUND COVER AND MESQUITE OR YUCCA FOR NESTING PLATFORMS. CONTINUED USE OF PESTICIDES IN MEXICO ENDANGERS THIS SPECIES. NO RECENT CONFIRMED REPORTS FOR ARIZONA.

## LISTED, PROPOSED, AND CANDIDATE SPECIES FOR THE FOLLOWING COUNTY:

COCHISE

6/4/2002

NAME: SOUTHWESTERN WILLOW FLYCATCHER *EMPIDONAX TRILLII EXIMUS*

STATUS: ENDANGERED

CRITICAL HAB No RECOVERY PLAN: No CFR: 60 FR 10694, 02-27-95

DESCRIPTION: SMALL PASSERINE (ABOUT 5") GRAYISH-GREEN BACK AND WINGS,  
WHITISH THROAT, LIGHT OLIVE-GRAY BREAST AND PALE YELLOWISH  
BELLY. TWO WINGBARS VISIBLE. EYE-RING FAINT OR ABSENT.ELEVATION  
RANGE: <8500 FT.COUNTIES: YAVAPAI, GILA, MARICOPA, MOHAVE, COCONINO, NAVAJO, APACHE, PINAL, LA PAZ, GREENLEE, GRAHAM,  
YUMA, PIMA, COCHISE, SANTA CRUZ

HABITAT: COTTONWOOD/WILLOW &amp; TAMARISK VEGETATION COMMUNITIES ALONG RIVERS &amp; STREAMS

MIGRATORY RIPARIAN OBLIGATE SPECIES THAT OCCUPIES BREEDING HABITAT FROM LATE APRIL TO  
SEPTEMBER. DISTRIBUTION WITHIN ITS RANGE IS RESTRICTED TO RIPARIAN CORRIDORS. DIFFICULT TO  
DISTINGUISH FROM OTHER MEMBERS OF THE EMPIDONAX COMPLEX BY SIGHT ALONE. TRAINING SEMINAR  
REQUIRED FOR THOSE CONDUCTING FLYCATCHER SURVEYS. CRITICAL HABITAT WAS SET ASIDE BY THE 10TH  
CIRCUIT COURT OF APPEALS (5/17/01).

NAME: WHOOPING CRANE

*GRUS AMERICANA*

STATUS: ENDANGERED

CRITICAL HAB Yes RECOVERY PLAN: Yes CFR: 32 FR 4001, 03-11-1967; 43  
FR 20936, 05-15-78DESCRIPTION: TALLEST AMERICAN BIRD (UP TO 5 FEET) SNOWY WHITE, LONG NECK  
AND LEGS, BLACK WING TIPS, RED CROWN, AND BLACK WEDGE  
SHAPED PATCH OF FEATHERS BEHIND ITS EYE.ELEVATION  
RANGE: 4500 FT.

COUNTIES: COCHISE

HABITAT: MARSHES, PRAIRIES, RIVER BOTTOMS

BIRDS IN THE ROCKY MOUNTAIN POPULATION ARE OCCASIONAL VISITORS IN ARIZONA DURING MIGRATION.  
USUALLY NEAR WILCOX PLAYA.

NAME: SONORA TIGER SALAMANDER

*AMBYSTOMA TIGRINUM STEBBINSI*

STATUS: ENDANGERED

CRITICAL HAB No RECOVERY PLAN: No CFR: 62 FR 663, 01-06-97

DESCRIPTION: 2.5 TO 4.9" SNOUT-VENT LENGTH WITH LIGHT-COLORED BANDS ON A  
DARK BACKGROUND. AQUATIC LARVAE ARE UNIFORM DARK COLOR  
WITH PLUME-LIKE GILLS AND TAIL FINS.ELEVATION  
RANGE: 4000-6300 FT

COUNTIES: SANTA CRUZ, COCHISE

HABITAT: STOCK TANKS AND IMPOUNDED CIENEGAS IN SAN RAFAEL VALLEY, HUACHUCA MOUNTAINS

ALSO OCCURS IN THE FOOTHILLS OF THE EAST SLOPE OF THE PATAGONIA AND HUACHUCA MOUNTAINS.  
POPULATIONS ALSO ON FORT HUACHUCA.

LISTED, PROPOSED, AND CANDIDATE SPECIES FOR THE FOLLOWING COUNTY:

COCHISE

6/4/2002

NAME: JAGUAR

PANTHERA ONCA

STATUS: THREATENED

CRITICAL HAB No RECOVERY PLAN: No

CFR: 62 FR 39147, 07-22-97, 37

DESCRIPTION: LARGEST SPECIES OF CAT NATIVE TO SOUTHWEST. MUSCULAR, WITH

FR 8478, 03-30-72

RELATIVELY SHORT, MASSIVE LIMBS, AND A DEEP-CHESTED BODY.

USUALLY CINNAMON-BUFF IN COLOR WITH MANY BLACK SPOTS.

WEIGHT RANGES FROM 40-135 KG (90-300 LBS).

ELEVATION

RANGE: 1,600 - >9,8 FT.

COUNTIES: COCHISE, SANTA CRUZ, AND PIMA

HABITAT: FOUND IN SONORAN DESERT SCRUB UP THROUGH SUBALPINE

ALSO OCCURS IN NEW MEXICO. A JAGUAR CONSERVATION TEAM IS BEING FORMED THAT IS BEING LED BY ARIZONA AND NEW MEXICO STATE ENTITIES ALONG WITH PRIVATE ORGANIZATIONS.

LISTED, PROPOSED, AND CANDIDATE SPECIES FOR THE FOLLOWING COUNTY:

COCHISE

6/4/2002

**2) PROPOSED****TOTAL= 2****NAME: MOUNTAIN PLOVER****CHARADRIUS MONTANUS****STATUS: PROPOSED THREATENED** CRITICAL HAB No RECOVERY PLAN: No CFR: 64 FR 7587; 02-16-1999**DESCRIPTION:** IN BREEDING SEASON WITH WHITE FOREHEAD AND LINE OVER THE EYE; CONTRASTING WITH DARK CROWN; NONDESCRIPT IN WINTER. VOICE IS LOW, VARIABLE WHISTLE.ELEVATION  
RANGE: VARIABLE FT.**COUNTIES:** YUMA, PIMA, COCHISE, PINAL, APACHE**HABITAT:** OPEN ARID PLAINS, SHORT-GRASS PRAIRIES, AND CULTIVATED FORMS.**SPECIES PRIMARILY FOUND IN ROCKY MOUNTAIN STATES FROM CANADA TO MEXICO. AZ PRIMARILY PROVIDES WINTERING HABITAT. BREEDING HAS BEEN DOCUMENTED, BUT IS RARE, AND IS LIKELY RESTRICTED TO TRIBAL AND STATE LANDS IN APACHE COUNTY.****NAME: CHIRICAHUA LEOPARD FROG****RANA CHIRICAHUENSIS****STATUS: PROPOSED** CRITICAL HAB No RECOVERY PLAN: No CFR: 65 FR 37343, 6-14-2000**DESCRIPTION:** CREAM COLORED TUBERCLES (spots) ON A DARK BACKGROUND ON THE REAR OF THE THIGH, DORSOLATERAL FOLDS THAT ARE INTERRUPTED AND DEFLECTED MEDIANLY, AND A CALL GIVEN OUT OF WATER DISTINGUISH THIS SPOTTED FROG FROM OTHER LEOPRDELEVATION  
RANGE: 3300-9900 FT.**COUNTIES:** SANTA CRUZ, APACHE, GILA, PIMA, COCHISE, GREENLEE, GRAHAM, YAVAPAI, COCONINO, NAVAJO**HABITAT:** STREAMS, RIVERS, BACKWATERS, PONDS, AND STOCK TANKS THAT ARE MOSTLY FREE FROM INTRODUCED FISH, CRAYFISH, AND BULLFROGS**REQUIRE PERMANENT OR NEARLY PERMANENT WATER SOURCES. POPULATIONS NORTH OF THE GILA RIVER MAY BE CLOSELY-RELATED, BUT DISTINCT, UNDESCRIBED SPECIES.**

LISTED, PROPOSED, AND CANDIDATE SPECIES FOR THE FOLLOWING COUNTY:

COCHISE

6/4/2002

**3) CANDIDATE****TOTAL= 5****NAME: LEMMON FLEABANE****ERIGERON LEMMONII****STATUS: CANDIDATE****CRITICAL HAB No RECOVERY PLAN: No CFR:****DESCRIPTION: A PROSTRATE PERENNIAL IN THE SUNFLOWER FAMILY. STEMS AND LEAVES ARE DENSELY HAIRY. FLOWERS LOOK LIKE SMALL DELICATE DAISIES, WITH WHITE TO LIGHT PURPLE OUTER PETALS AND YELLOW INNER PETALS.****ELEVATION****RANGE: 1500-6000 FT.****COUNTIES: COCHISE****HABITAT: GROWS IN DENSE CLUMPS IN CREVICES, LEDGES, AND BOULDERS IN CANYON BOTTOMS IN PINE-OAK WOODLAND****ONE SITE ON FORT HUACHUCA MILITARY RESERVATION****NAME: BLACK-TAILED PRAIRIE DOG****CYNOMYS LUDOVICIANUS****STATUS: CANDIDATE****CRITICAL HAB No RECOVERY PLAN: No CFR:****DESCRIPTION: SMALL, STOUT GROUND SQUIRRELS. TOTAL LENGTH OF ADULT 14-17 INCHES; ABOUT 1-3 LBS. INDIVIDUALS IN MIXED COLORS OF BROWN, BLACK, GRAY, AND WHITE. BLACK-TIPPED TAIL. A SOCIAL ANIMAL LIVING IN AGGREGATIONS CALLED TOWNS, COLONIES, OR VILLAGES.****ELEVATION****RANGE: APPROX. 5.FT.****COUNTIES: COCHISE, GRAHAM, AND GREENLEE****HABITAT: IN BURROWS IN PLAINS AND GRASSLAND HABITATS.****SPECIES IS CURRENTLY EXTIRPATED FROM THE STATE, BUT CONSERVATION EFFORTS ARE UNDERWAY. TWELVE-MONTH PETITION FINDING PUBLISHED 2/4/00. EXTIRPATED FROM AZ AROUND 1938. REINTRODUCTION ATTEMPTED IN 1972, BUT FAILED.****NAME: GILA CHUB****GILA INTERMEDIA****STATUS: CANDIDATE****CRITICAL HAB No RECOVERY PLAN: No CFR:****DESCRIPTION: DEEP COMPRESSED BODY, FLAT HEAD. DARK OLIVE-GRAY COLOR ABOVE, SILVER SIDES. ENDEMIC TO GILA RIVER BASIN.****ELEVATION****RANGE: 2000 - 3500 FT.****COUNTIES: SANTA CRUZ, GILA, GREENLEE, PIMA, COCHISE, GRAHAM, YAVAPAI****HABITAT: POOLS, SPRINGS, CIENEGAS, AND STREAMS****MULTIPLE PRIVATE LANDOWNERS, INCLUDING THE NATURE CONSERVANCY, THE AUDUBON SOCIETY, AND OTHERS, ALSO FT. HUACHUCA. SPECIES ALSO FOUND IN SONORA, MEXICO.**

LISTED, PROPOSED, AND CANDIDATE SPECIES FOR THE FOLLOWING COUNTY:

COCHISE

6/4/2002

NAME: YELLOW-BILLED CUCKOO

COCYZUS AMERICANUS

STATUS: CANDIDATE

CRITICAL HAB No RECOVERY PLAN: No CFR. 66 FR 38511: 07-25-01

DESCRIPTION: MEDIUM-SIZED BIRD WITH A SLENDER, LONG-TAILED PROFILE,  
SLIGHTLY DOWN-CURVED BILL, WHICH IS BLUE-BLACK WITH YELLOW  
ON THE LOWER HALF OF THE BILL. PLUMAGE IS GRAYISH-BROWN  
ABOVE AND WHITE BELOW, WITH RUFOUS PRIMARY FLIGHT FEATHERS. ELEVATION  
RANGE: <6,500 FT

COUNTIES: APACHE, COCHISE, COCONINO, GILA, GRAHAM, GREENLEE, LA PAZ, MARICOPA, MOHAVE, NAVAJO, PIMA,  
PINAL, SANTA CRUZ, YAVAPAI, YUMA

HABITAT: LARGE BLOCKS OF RIPARIAN WOODLANDS (COTTONWOOD, WILLOW, OR TAMARISK GALLERIES)

SPECIES WAS FOUND WARRANTED, BUT PRECLUDED FOR LISTING AS A DISTINCT VERTEBRATE POPULATION  
SEGMENT IN THE WESTERN U.S. ON JULY 25, 2001. THIS FINDING INDICATES THAT THE SERVICE HAS SUFFICIENT  
INFORMATION TO LIST THE BIRD, BUT OTHER, HIGHER PRIORITY LISTING ACTIONS PREVENT THE SERVICE FROM  
ADDRESSING THE LISTING OF THE CUCKOO AT THIS TIME.

NAME: HUACHUCA SPRINGSNAIL

PYRGULOPSIS THOMPSONI

STATUS: CANDIDATE

CRITICAL HAB No RECOVERY PLAN: No CFR:

DESCRIPTION: VERY SMALL (1.7-3.2mm) CONICAL SHELL. IDENTIFICATION MUST BE  
VERIFIED BY CHARACTERISTICS OF REPRODUCTIVE ORGANS.

ELEVATION  
RANGE: 4500-8000 FT.

COUNTIES: COCHISE, SANTA CRUZ

HABITAT: AQUATIC AREAS, SMALL SPRINGS WITH VEGETATION SLOW TO MODERATE FLOW.

INDIVIDUALS FOUND ON FIRM SUBSTANCES (ROOTS, WOOD, AND ROCKS) OTHER POPULATIONS FOUND ON FORT  
HUACHUCA MILITARY PROPERTY

LISTED, PROPOSED, AND CANDIDATE SPECIES FOR THE FOLLOWING COUNTY:

COCHISE

6/4/2002

**4) CONSERVATION AGREEMENT****TOTAL= 1**

NAME: RAMSEY CANYON LEOPARD FROG

RANA SUBAQUAVOCALIS

STATUS: CONSERVATION AGREEMENT CRITICAL HAB No RECOVERY PLAN: No CFR: 59 FR 58986

DESCRIPTION: BROWN OR GREEN FROG, 2.5 TO 4 INCHES LONG; SPOTS ROUNDED  
WITH LIGHT BORDERS; DORSOLATERAL FOLDS ARE INTERRUPTED  
POSTERIORLY AND DEFLECTED MEDIALY; YELLOWISH PIGMENTATION ELEVATION  
ON THE GROIN WHICH MAY EXTEND INTO THE POSTERIOR VENTER RANGE: 5,000 FT FT

COUNTIES: COCHISE

HABITAT: ARTIFICIAL PONDS IN TINKER, BROWN, AND RAMSEY CANYONS ON THE EAST SLOPE OF THE HUACHUCA  
MOUNTAINS.

CONSERVATION AGREEMENT BETWEEN THE SERVICE, ARIZONA GAME AND FISH DEPARTMENT, THE NATURE  
CONSERVANCY, BUREAU OF LAND MANAGEMENT, CORONADO NATIONAL FOREST, THE US ARMY INTELLIGENCE  
CENTER AND FORT HUACHUCA, AND A PRIVATE LANDOWNER WAS SIGNED IN AUGUST 1996. SPECIES ALSO  
OCCURS ON FORT HUACHUCA.

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**STATUS DEFINITIONS**  
ARIZONA GAME AND FISH DEPARTMENT (AGFD)  
HERITAGE DATA MANAGEMENT SYSTEM (HDMS)

**FEDERAL US STATUS**

ESA    Endangered Species Act (1973 as amended)  
      US Department of Interior, Fish and Wildlife Service

**Listed**

- LE    Listed Endangered: imminent jeopardy of extinction.
- LT    Listed Threatened: imminent jeopardy of becoming Endangered.
- XN    Experimental Nonessential population.

**Proposed for Listing**

- PE    Proposed Endangered.
- PT    Proposed Threatened.

**Candidate (Notice of Review: 1996)**

- C    Candidate. Species for which USFWS has sufficient information on biological vulnerability and threats to support proposals to list as Endangered or Threatened under ESA. However, proposed rules have not yet been issued because such actions are precluded at present by other listing activity.
- SC    Species of Concern. The terms "Species of Concern" or "Species at Risk" should be considered as terms-of-art that describe the entire realm of taxa whose conservation status may be of concern to the US Fish and Wildlife Service, but neither term has official status (currently all former C2 species).

**Critical Habitat (check with state or regional USFWS office for location details)**

- Y    Yes: Critical Habitat has been designated.
- P    Proposed: Critical Habitat has been proposed.

[ N    No Status: certain populations of this taxon do not have designated status (check with state or regional USFWS office for details about which populations have designated status)].

USFS    US Forest Service (1988 Animals, 1990 Plants)  
      US Department of Agriculture, Forest Service, Region 3

- S    Sensitive: those taxa occurring on National Forests in Arizona which are considered sensitive by the Regional Forester.

**TRIBAL STATUS**

NESL    Navajo Endangered Species List (1997)  
      Navajo Nation, Navajo Fish and Wildlife Department

The Navajo Endangered Species List contains taxa with status from the entire Navajo Nation which includes parts of Arizona, Utah, and New Mexico. In this notebook we provide NESL status for only those taxa whose distribution includes part or all of the Arizona portion of the Navajo Nation.

**Groups**

- 1    Those species or subspecies that no longer occur on the Navajo Nation.
- 2    Any species or subspecies which is in danger of being eliminated from all or a significant portion of its range on the Navajo Nation.
- 3    Any species or subspecies which is likely to become an endangered species, within the foreseeable future, throughout all or a significant portion of its range on the Navajo Nation.

- 4 Any species or subspecies for which the Navajo Fish and Wildlife Department (NF&WD) does not currently have sufficient information to support their being listed in Group 2 or Group 3 but has reason to consider them. The NF&WD will actively seek information on these species to determine if they warrant inclusion in a different group or removal from the list.

## MEXICAN STATUS

MEX Mexican Federal Endangered Species List (May 16, 1994)  
Secretaría de Desarrollo Social, NORMA Oficial Mexicana NOM-059-ECOL-1994

The Mexican Federal Endangered Species List contains taxa with status from the entire Mexican Republic and waters under its jurisdiction. In this notebook we provide MEX designations for only those taxa occurring in Arizona and also in Mexico.

- P En Peligro de Extinción (Determined Endangered in Mexico): in danger of extinction.  
A Amenazada (Determined Threatened in Mexico): could become endangered if factors causing habitat deterioration or population decline continue.  
R Rara (Determined Rare in Mexico): populations viable but naturally scarce or restricted to an area of reduced distribution or very specific habitats.  
Pr Sujeta a Protección Especial (Determined Subject to Special Protection in Mexico): utilization limited due to reduced populations, restricted distribution, or to favor recovery and conservation of the taxon or associated taxa.

[ | = One or more subspecies of this species has status in Mexico, but the HDMS does not track it at the subspecies level (most of these subspecies are endemic to Mexico). Please consult the NORMA Oficial Mexicana NOM-059-ECOL-1994 for details.]

## STATE STATUS

NPL Arizona Native Plant Law (1993)  
Arizona Department of Agriculture

- HS Highly Safeguarded: no collection allowed.  
SR Salvage Restricted: collection only with permit.  
ER Export Restricted: transport out of State prohibited.  
SA Salvage Assessed: permits required to remove live trees.  
HR Harvest Restricted: permits required to remove plant by-products.

WSCA Wildlife of Special Concern in Arizona (1996 in prep)  
Arizona Game and Fish Department

WC Wildlife of Special Concern in Arizona. Species whose occurrence in Arizona is or may be in jeopardy, or with known or perceived threats or population declines, as described by the Arizona Game and Fish Department's listing of Wildlife of Special Concern in Arizona October 1996 Draft.



THE STATE OF ARIZONA

## GAME AND FISH DEPARTMENT

2221 WEST GREENWAY ROAD, PHOENIX, AZ 85023-4399  
(602) 942-3000 • WWW.AZGFD.COM

**GOVERNOR**

JANE DEE HULL

**COMMISSIONERS**

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JOE MELTON, YUMA

**DIRECTOR**

DUANE L. SHROUFE

**DEPUTY DIRECTOR**

STEVE K. FERRELL



**Tucson Office, 555 N. Greasewood Rd., Tucson, AZ 85745**

August 8, 2002

Mr. Michael Collins  
Vernadero Consulting  
7349 Via Paseo Del Sur, Ste. 515-301  
Scottsdale, Arizona ~~85746~~  
85258

Re: Scoping Comments for Proposed Immigration and Naturalization Service Facility and Operational Expansion at Sierra Vista Municipal Airport; T21S, R21E, Section 20.

Dear Mr. Collins:

The Arizona Game & Fish Department (Department) has reviewed the above-referenced project for its potential to adversely affect special status species, habitats of special concern, and other significant wildlife resources. Due to time and personnel constraints, we were unable to do an on-the-ground review of resource conditions. However, based on information and photograph that you provided, it appears that the native vegetation community on proposed 7-acre project site was removed as early as 1992 for a previous project and has not undergone regeneration since that time.

Attached is a list of special status species that are known to occur in the vicinity of the above-referenced project site (Attachment A). This list is based on the review of records in the Department's Heritage Data Management System<sup>1</sup> (HDMS). The Department does not anticipate that wildlife resources will accrue any significant adverse impacts as the result of implementing the proposed project. This opinion is based upon the following project characteristics: the degraded condition of on-site resources, the small acreage and location within on-going airport activities, and distance from the San Pedro River. However, because the U.S. Fish & Wildlife Service (FWS) is responsible for interpretation and implementation of the Endangered Species Act, the Department recommends you contact the FWS Ecological Services Field Office regarding Critical

<sup>1</sup> Information contained in the Department's HDMS is dynamic and updated on a periodic basis. Any information, therefore, is likely to become outdated shortly after its release. Such information is intended to serve as a guide regarding what species may be found in a particular area. It does not represent the results of comprehensive species-specific surveys.

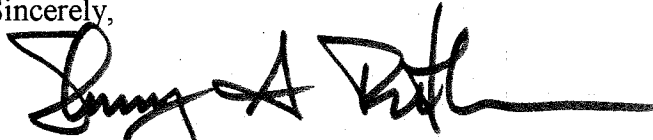
Mr. Collins  
August 8, 2002  
2

Habitat for the spikedace, loachminnow, and Huachuca water umbel which exists within a 5-mile radius of the proposed project site.

Mr. Steven Spangle  
Arizona Ecological Services Field Office  
U.S. Fish & Wildlife Service  
2324 W. Royal Palm Road, Ste. 103  
Phoenix, Arizona 85021-4951

Please give me a call at 520/628-5982 Ext. 137 if you have questions or require additional information. We look forward to receiving a copy of the Draft and Final Environmental Assessments.

Sincerely,



Sherry A. Rutherford  
Habitat Specialist

SAR:sr

Attachment

cc:Bob Broscheid, Project Evaluation Coordinator, Habitat Branch, PHX (AGFD Log No.7-29-02/01)

John Millican, District Wildlife Manager

Steven Spangle, USFWS, Az Ecol. Services Field Ofc, PHX

C:\PROJECTS\FEDS\INS\Xpansion@SV Airport.doc

### Special Status Species within 5 Miles of T21S,R21E Sec 20

NAME	COMMON NAME	ESA	USFS	BLM	WSCA	NPL
<i>AGOSIA CHRYSOGASTER</i>	LONGFIN DACE	SC		S		
<i>ANTHUS SPRAGUEII</i>	SPRAGUE'S PIPIT				WC	
<i>ASTURINA NITIDA MAXIMA</i>	NORTHERN GRAY HAWK	SC	S	S	WC	
<i>CATOSTOMUS CLARKI</i>	DESERT SUCKER	SC		S		
<i>COCCYZUS AMERICANUS</i>	YELLOW-BILLED CUCKOO	C	S		WC	
<i>EMPIDONAX TRAILLII EXTIMUS</i>	SOUTHWESTERN WILLOW FLYCATCHER	LE	S		WC	
<i>EUMOPS PEROTIS CALIFORNICUS</i>	GREATER WESTERN MASTIFF BAT	SC				
<i>RANA YAVAPAIENSIS</i>	LOWLAND LEOPARD FROG	SC	S		WC	

Critical Habitat for the spikedace, loachminnow, and Huachuca water umbel in project area. AGFD #7-29-02(01), INS Project.

Arizona Game and Fish Department, Heritage Data Management System, August 8, 2002.



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July 19, 2002

Mr. Michael G. Collins  
Vernadero Consulting  
7349 Via Paseo Del Sur 515-301  
Scottsdale, AZ 85258

**Re: Results of Class I Inventory Survey - Sierra Vista Airport.  
Entranco Project 2-30-02102, Report No. 2002-023.**

Dear Mr. Collins:

Entranco, Inc. has completed a Class I inventory survey of two non-contiguous parcels of land within the Sierra Vista Airport, Cochise County, Arizona, at the request of Vernadero Consulting, prior to selection of a site for the construction of a hangar. The project area comprises a 10-acre parcel of land owned by the Department of the Army, and a 6.77-acre parcel of land owned by the City of Sierra Vista. It is located in the southeast quarter of the northwest quarter of Section 20 and the northeast quarter of the southwest quarter of Section 20, Township 21 South, Range 20 East, Gila and Salt River Baseline and Meridian (Figure 1). The inventory survey consists of a record search and site files check to identify previous surveys and previously recorded cultural resource sites within and surrounding the project area. This investigation conforms to all applicable professional standards and policies including the *Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation*.

Records at Entranco, the Arizona State Museum, the Arizona State Historic Preservation Office, and the Bureau of Land Management, Phoenix Information Access Center were examined. Five surveys and two cultural resource sites were identified within a one-mile radius of the project area (Figure 1, Tables 1 and 2). One survey (Wilson 1982) encompassed a portion of both of the project parcels. However, no sites were recorded within the parts of the project area that were surveyed.

Entranco recommends that all open and undisturbed land should be subject to intensive pedestrian survey (Class III inventory) to determine whether significant cultural resources exist within the project parcels. This survey should include the area previously recorded by Wilson (1982) in order to meet current professional survey and site recording standards.

7740 North 16th Street  
Suite 200  
Phoenix, Arizona  
85020-4462  
Telephone 602 889 7000  
Fax 602 889 7101



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Wastewater

Thank you for the opportunity to complete this work. Please do not hesitate to contact Entranco should you have any questions regarding the results and recommendations of this investigation.

Sincerely,  
ENTRANCO

Erin Davis  
Archaeologist

Submitted By:  
ENTRANCO

*Mary-Ellen Walsh*

Mary-Ellen Walsh  
Senior Archaeologist

enclosures

#### REFERENCES

Cottrel, Marie

1989 Archaeological Resource Survey Completed for 600 +/- Acres Located North of the Cantonment Area and South of Libby Army Airfield at Ft. Huachuca, Cochise County, Arizona. Memo of Record, Department of the Army.

Curtis, Ross. S.

1989 *A Cultural Resources Survey of a 3.8 Mile Long Segment of State Route 90 Right-of-Way Near Huachuca City, Cochise County, Arizona.* Archaeological Research Services, Inc, Tempe.

Dennis, Carolyn K. (Lt. Col.)

1988 Archaeological Resources Assessment Joint Operation Training Site, Fort Huachuca, Arizona. Air National Guard of Arizona, Phoenix.

Kayser, Andrea, and Teresa M. Serrano

1999 *A Class III Archaeological Survey of the Arizona Electric Power Cooperative Pantano to Kartchner Transmission Line.* Cultural Resource Report No. 99-183. SWCA, Inc., Environmental Consultants, Tucson.

Wilson, John P.

1982 *Cultural Resources Survey of Proposed South Arizona Auxiliary Airfields.* Report No. 28, Las Cruces.

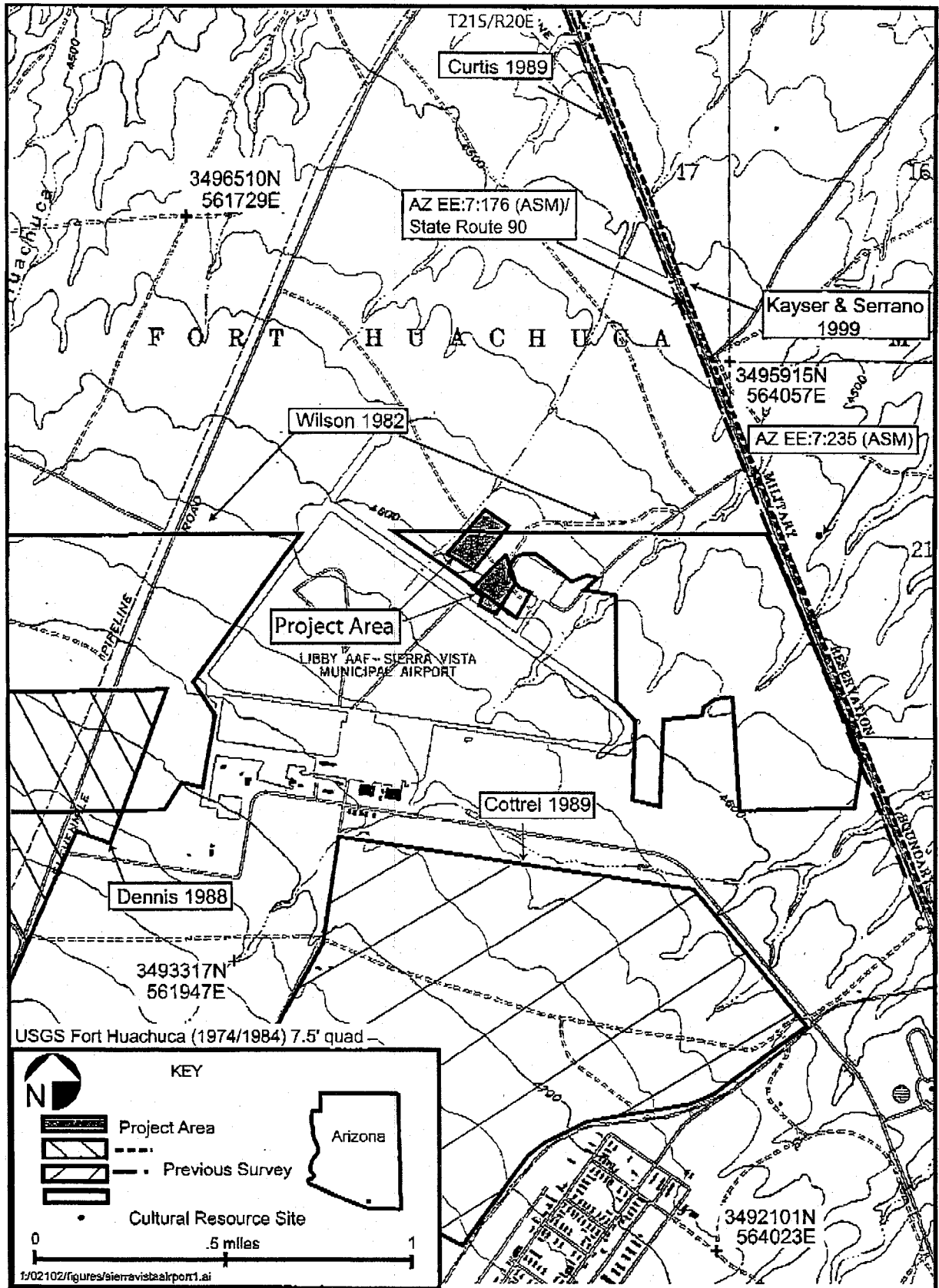


Figure 1. Location of project area showing previous surveys and previously recorded cultural resource sites.

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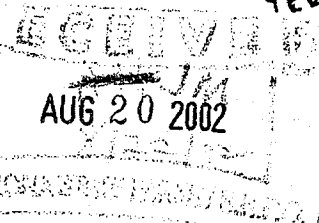
**Table 1. Previously surveyed areas within the project area and a surrounding one-mile radius.**

Reference	Acres / Miles Surveyed	Location / Proximity to Project Area	Sites in Project Area & Vicinity
Cottrel 1990	~600 acres	Outside project area, ~0.70 miles south	None
Curtis 1989	3.80 miles of 200-ft-wide R/W	Outside project area ~0.75 miles northeast	None
Dennis 1988	240 acres	Outside project area, ~0.80 miles southwest	None
Kayser & Serrano 1999	54 miles of 50-ft-wide R/W	Outside project area ~0.75 miles east along SR 90	AZ EE:7:176 (ASM)
Wilson 1982	~943 acres	Within a portion of both the project parcels	None

**Table 2. Previously recorded sites within the survey area and the surrounding one-mile radius.**

Site (ASM)	Site Type	Affiliation	Age	NRHP Eligibility	Proximity to Survey Area
AZ EE:7:235	Trash dump and lithic scatter	Euroamerican and unknown prehistoric	Early 1900s and prehistoric	Unevaluated	~0.85 miles east
AZ EE:7:176	Historic road (SR 90)	Euroamerican	1940-1947	Not eligible	~0.75 miles east

S.H.P.O.- 2002 -1791 (12305)

REPLY TO  
ATTENTION OF:DEPARTMENT OF THE ARMY  
FORT WORTH DISTRICT, CORPS OF ENGINEERS  
P. O. BOX 17300  
FORT WORTH, TEXAS 76102-0300

August 16, 2002

Planning, Environmental and Regulatory Division

SUBJECT: Request for concurrence with No Effect Determination under National Historic Preservation Act of 1966 for Proposed Construction and Operation of US Border Patrol (USBP) Facility at the Sierra Vista Municipal Airport (SVMA), Sierra Vista, Arizona

Mr. James Garrison, State Historic Preservation Officer  
ATTN: Ms. Joanne Medley  
Arizona State Parks  
1300 West Washington  
Phoenix, Arizona 85007

Dear Mr. Garrison:

In accordance with Section 106 of the National Historic Preservation Act and its implementing regulations, 36 CFR Part 800, The Fort Worth District of the US Army Corps of Engineers, acting on behalf of the Immigration and Naturalization Service (INS) and the US Border Patrol (USBP), is initiating the consultation process with your office regarding the proposed project noted above. Construction alternatives under analysis include two locations at SVMA (see Attachment A).

The first alternative is a 6.77 acre site bounded on the south by Sierra Vista Municipal Airport (SVMA) and extending northward approximately 100 yards, located in the southeast quarter of the northwest quarter of Section 20 and the northeast quarter of the southwest quarter of Section 20, Township 21 South, Range 20 East, Gila and Salt River Baseline and Meridian (see Attachment B 1-4).

The second alternative is a 10-acre site west of the future Taxiway "D" extension and approximately 400 feet northeast of Taxiway "K" (on U.S. Army property) for the construction and operation of the proposed facilities. All 10 acres of land could be disturbed during facility construction (see Attachment C 1-2).

The preferred alternative is the 6.77-acre site. The Fort Worth District, acting for INS, is also preparing an environmental assessment for this proposed action. As soon as the draft becomes available, you will be sent a copy for your immediate review and comment.

Mike Collins

480-315-1001

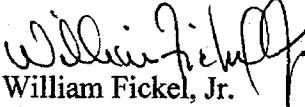
-2-

As part of the environmental review of possible effects of this undertaking, and in compliance with the National Historic Preservation Act of 1966, as amended (P.L. 89-665; 16 USC §470 et seq.), a check of the archaeological records for the locality in question was made. As documented in the attached letter (Attachment D) this check was conducted at the Arizona State Museum, the Arizona State Historic Preservation Office, and the Bureau of Land Management, Phoenix information center by Ms. Erin Davis of Entranco.

The check of the archaeological records indicated that a pedestrian survey of the proposed project site was conducted in 1982 (Wilson 1982). The survey did not find any archaeological or historic materials, features, or sites in the proposed 6.77 acre project area. One site is known to exist within 1 mile (State Route 90). This site would not be affected by the proposed undertaking. The entire 6.77 acre site is disturbed. In the mid 1990s, the entire site was used as a soil stockpile area during the extension of runway D at SVMA. Approximately 8 feet of soil remains stockpiled and leveled at this site. In 2001, the site was used for heavy equipment staging during the construction of the Large Aircraft Apron at SVMA. The site remains extremely disturbed. Based upon the negative findings for the locality, and in accordance with 36 CFR Part 800.4(d)(1), we have determined there will be no historic properties affected. We respectfully request your concurrence with this determination. If we have not heard from you within 30 days of receipt of this request, we will assume your concurrence with our determination.

If you require any additional information please contact Ms. Patience Patterson of my staff at (817) 886-1723.

Sincerely,

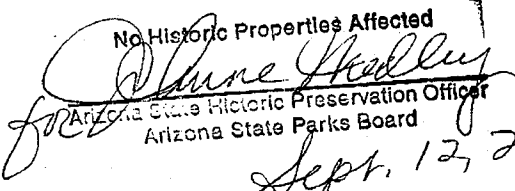
  
William Fickel, Jr.  
Chief, Planning, Environmental  
and Regulatory Division

Enclosure

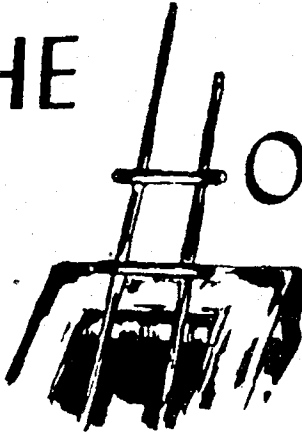
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Charles H. Parsons  
Regional Environmental Officer  
Immigration and Naturalization Service  
Administrative Center Laguna  
P.O. Box 30080 Laguna Niguel, CA 92607-0080

*Concur*

  
Rhonda Stalley  
Arizona State Historic Preservation Officer  
Arizona State Parks Board  
Sept. 12, 2002

# THE HOPI TRIBE



Wayne Taylor, Jr.  
CHAIRMAN

Elgean Joshevama  
VICE-CHAIRMAN

August 29, 2002

William Fickel, Jr., Chief Planning, Environmental and Regulatory Division  
Attention Ms. Patience Patterson  
Department of the Army, Fort Worth District, Corps of Engineers  
P.O. Box 17300  
Fort Worth, Texas 76102-0300

Mike Collins  
480-315-1001

Dear Mr. Fickel,

Thank you for your correspondence to Chairman Taylor dated August 19, 2002, regarding proposed construction and operation of a U.S. Border Patrol facility at the Sierra Vista Municipal Airport. As you know, the Hopi Tribe claims cultural affiliation to prehistoric cultural groups in Arizona, and therefore we appreciate the Corps of Engineers (Corps) continuing solicitation of our input and your efforts to address our concerns.

The Hopi Cultural Preservation Office has reviewed your letter and the enclosed copy of a Class I Inventory Survey by Entranco, which identify no cultural resources in the 6.77 acre preferred alternative project area. We are not aware of any Hopi Traditional Cultural Properties in this project area. Therefore, we concur that this proposal is unlikely to affect prehistoric cultural resources, and we have no further concerns regarding this project.

Hopi clans migrated to and settled in areas throughout the Southwest before migrating to and settling on the Hopi Mesas. The Hopi Tribe considers our ancestral villages, referred to as archaeological sites, to be Hopi Traditional Cultural Places. Other Hopi Traditional Cultural Places are associated with our ancestral and modern Villages, and include shrines, trails, rock markings, and traditional gathering places. Hopi people consider prehistoric archaeological sites and isolated occurrences to be the "footprints" of our ancestors. Therefore the Hopi Cultural Preservation Office supports identification and avoidance of prehistoric archaeological sites.

Pursuant to previous consultations with Ms. Patience Patterson and the Fort Worth District, to assist the Corp in identifying issues important to the Hopi Tribe, in accordance with Executive Order 13084, Consultation and Coordination with Indian Tribal Governments, we hereby provide the Hopi Tribe's general comment subjects and questions:

1. **Impact on archeological sites and cultural resources, in general as parts of the human environment, in accordance with the Archeological Resources Protection Act, National Historic Preservation Act, Executive Order 13007 American Indian Sacred Sites, National Environmental Policy Act, and Native American Graves Protection and Repatriation Act :**

William Fickel, Jr.  
August 29, 2002  
Page 2

*Has an archeological survey of the project area been conducted? Will known cultural resource sites records be located, and survey verifications be conducted?*

*How will the action be managed to avoid impact to archeological sites, traditional cultural properties, and cultural resources generally? Will access roads be necessary? How will access roads impact cultural and natural resources?*

**2. Impacts to ethnobotanical plants, such as native tobacco, in accordance with the National Environmental Policy Act, and Executive Order 12898, Environmental Justice:**

*What impacts will the action have on native plants, such as native tobacco?  
How will the action be managed to avoid impacts to native plants?*

**3. Impact on eagle and raptor habitats, in accordance with the American Indian Religious Freedom Act, Endangered Species Act, Bald Eagle Protection Act, Migratory Bird Treaty Act:**

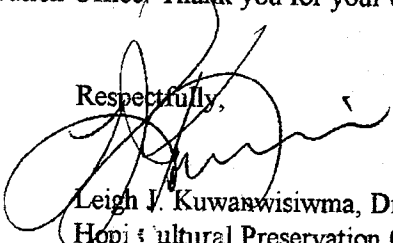
*What are the current populations of these species?  
What effects does the action have on these populations?  
How will the action be managed to avoid impacts to eagles and other raptor species, their nesting and reproductive behaviors, and their habitats?*

This letter can be included with all proposals when the Corp's has conducted cultural resource surveys of the areas of potential effect with negative results. Because of the distance from the Hopi reservation to the Fort Worth District, we can concur without requiring site visits for Traditional Cultural Property identification, inspect that these proposals are unlikely to affect prehistoric cultural resources, and we have no further concerns regarding this type of proposal.

Please keep the Hopi Cultural Preservation Office notified of any specific proposals with the potential to impact specific archeological sites and cultural resources.

Should you have any questions or need additional information, please contact Terry Morgart or Clay Hamilton at the Hopi Cultural Preservation Office. Thank you for your consideration.

Respectfully,

  
Leigh J. Kuwanwisiwma, Director  
Hopi Cultural Preservation Office

xc: Office of the Chairman  
Clay Hamilton, Hopi Cultural Preservation Office  
Arizona State Historic Preservation Office

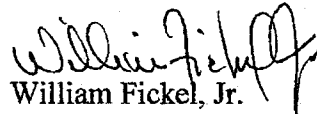
-2-

As part of the environmental review of possible effects of this undertaking, and in compliance with the National Historic Preservation Act of 1966, as amended (P.L. 89-665; 16 USC §470 et seq.), a check of the archaeological records for the locality in question was made. As documented in the attached letter (Attachment D) this check was conducted at the Arizona State Museum, the Arizona State Historic Preservation Office, and the Bureau of Land Management, Phoenix information center by Ms. Erin Davis of Entranco.

The check of the archaeological records indicated that a pedestrian survey of the proposed project site was conducted in 1982 (Wilson 1982). The survey did not find any archaeological or historic materials, features, or sites in the proposed 6.77 acre project area. One site is known to exist within 1 mile (State Route 90). This site would not be affected by the proposed undertaking. The entire 6.77 acre site is disturbed. In the mid 1990s, the entire site was used as a soil stockpile area during the extension of runway D at SVMA. Approximately 8 feet of soil remains stockpiled and leveled at this site. In 2001, the site was used for heavy equipment staging during the construction of the Large Aircraft Apron at SVMA. The site remains extremely disturbed. Based upon the negative findings for the locality, and in accordance with 36 CFR Part 800.4(d)(1), we have determined there will be no historic properties affected. We respectfully request your concurrence with this determination. If we have not heard from you within 30 days of receipt of this request, we will assume your concurrence with our determination.

If you require any additional information please contact Ms. Patience Patterson of my staff at (817) 886-1723.

Sincerely,



William Fickel, Jr.  
Chief, Planning, Environmental  
and Regulatory Division

Enclosure

Copy furnished w/o enclosure

Charles H. Parsons  
Regional Environmental Officer  
Immigration and Naturalization Service  
Administrative Center Laguna  
P.O. Box 30080 Laguna Niguel, CA 92607-0080

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MESCALERO *Apache* TRIBE  
Sara Higuera, President Mescalero, New Mexico 88340

TRIBAL HISTORIC PRESERVATION OFFICE  
101 Central Avenue  
P.O. Box 227  
Mescalero, New Mexico 88340  
Phone: 505/464-4494 ext. 279 or 270  
Fax: 505/464-9191

William Fickel, Jr.  
Chief, Planning, Env. & Regulatory Div.  
Fort Worth District, Corps of Engineers  
P.O. Box 17300  
Fort Worth, Texas 76102-0300

Dear Mr. Fickel:

(X) The *Mescalero Apache Tribe* has determined that the proposed "construction of US Border Patrol Facility, Sierra Vista Airport, Sierra Vista, Arizona" **WILL NOT AFFECT** any objects, sites, or locations important to our traditional culture or religion.

() The *Mescalero Apache Tribe* has determined that the proposed project **WILL AFFECT** objects, sites, or locations important to our traditional culture or religion.

In the future, we request that you minimally provide us with the following items to aid in our determination:

- Cultural Resource Survey Reports
- Site Forms
- Maps (Both General and Site Specific)
- Research Designs (If Applicable)
- Data Recovery Plans (If Applicable)
- Photographs

Thank you for providing the Mescalero Apache Tribe the opportunity to comment on this project. We look forward to reviewing and commenting on future Army Corps of Engineers projects.

CONCUR:

Donna Stern-McFadden

Name

Donna Stern-McFadden

Signature

Tribal Historic Preservation Officer

Title

8/22/02

Date

*Mike Collins*

COMMENTS:

480-315-1001

FYI + insertion  
EH

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**DEPARTMENT OF THE ARMY**  
FORT WORTH DISTRICT, CORPS OF ENGINEERS  
P. O. BOX 17300  
FORT WORTH, TEXAS 76102-0300

REPLY TO  
ATTENTION OF:

August 19, 2002

Planning, Environmental and Regulatory Division

**SUBJECT:** Request for concurrence with No Effect Determination under National Historic Preservation Act of 1966 for Proposed Construction and Operation of US Border Patrol (USBP) Facility at the Sierra Vista Municipal Airport (SVMA), Sierra Vista, Arizona

Honorable Ruey Darrow, Chairwoman  
ATTN: Mr. Leland Darrow, Cultural Resources Manager  
Fort Sill Apache Tribe  
Route 2, Box 121  
Apache, OK 73006

Dear Chairwoman Darrow:

In accordance with Section 106 of the National Historic Preservation Act and its implementing regulations, 36 CFR Part 800, The Fort Worth District of the US Army Corps of Engineers, acting on behalf of the Immigration and Naturalization Service (INS) and the US Border Patrol (USBP), wishes to continue to consult with the appropriate federally recognized Native American tribes who historically used this region or continue to use the area. We welcome your comments on this undertaking and look forward to hearing from you. Construction alternatives under analysis include two locations at SVMA (see Attachment A).

The first alternative is a 6.77 acre site bounded on the south by Sierra Vista Municipal Airport (SVMA) and extending northward approximately 100 yards, located in the southeast quarter of the northwest quarter of Section 20 and the northeast quarter of the southwest quarter of Section 20, Township 21 South, Range 20 East, Gila and Salt River Baseline and Meridian (see Attachment B 1-4).

The second alternative is a 10-acre site west of the future Taxiway "D" extension and approximately 400 feet northeast of Taxiway "K" (on U.S. Army property) for the construction and operation of the proposed facilities. All 10 acres of land could be disturbed during facility construction (see Attachment C 1-2).

The preferred alternative is the 6.77-acre site. The Fort Worth District, acting for INS, is also preparing an environmental assessment for this proposed action. As soon as the draft becomes available, you will be sent a copy for your immediate review and comment.

-2-

As part of the environmental review of possible effects of this undertaking, and in compliance with the National Historic Preservation Act of 1966, as amended (P.L. 89-665; 16 USC §470 et seq.), a check of the archaeological records for the locality in question was made. As documented in the attached letter (Attachment D) this check was conducted at the Arizona State Museum, the Arizona State Historic Preservation Office, and the Bureau of Land Management, Phoenix information center by Ms. Erin Davis of Entranco.

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If you require any additional information please contact Ms. Patience Patterson of my staff at (817) 886-1723, or by email at [patience.e.patterson@swf02.usace.army.mil](mailto:patience.e.patterson@swf02.usace.army.mil).

Sincerely,



William Fickel, Jr.  
Chief, Planning, Environmental  
and Regulatory Division

Enclosure

Copy furnished w/o enclosure

Charles H. Parsons  
Regional Environmental Officer  
Immigration and Naturalization Service  
Administrative Center Laguna  
P.O. Box 30080 Laguna Niguel, CA 92607-0080



**DEPARTMENT OF THE ARMY**  
FORT WORTH DISTRICT, CORPS OF ENGINEERS  
P. O. BOX 17300  
FORT WORTH, TEXAS 76102-0300

REPLY TO  
ATTENTION OF:

August 19, 2002

Planning, Environmental and Regulatory Division

**SUBJECT:** Request for concurrence with No Effect Determination under National Historic Preservation Act of 1966 for Proposed Construction and Operation of US Border Patrol (USBP) Facility at the Sierra Vista Municipal Airport (SVMA), Sierra Vista, Arizona

Ms. Donna Stern-McFadden  
Tribal Historic Preservation Officer  
Mescalero Apache Tribe  
P.O. Box 227  
Mescalero, NM 88340

Dear Mrs. Stern-McFadden:

In accordance with Section 106 of the National Historic Preservation Act and its implementing regulations, 36 CFR Part 800, The Fort Worth District of the US Army Corps of Engineers, acting on behalf of the Immigration and Naturalization Service (INS) and the US Border Patrol (USBP), wishes to continue to consult with the appropriate federally recognized Native American tribes who historically used this region or continue to use the area. We welcome your comments on this undertaking and look forward to hearing from you. Construction alternatives under analysis include two locations at SVMA (see Attachment A).

The first alternative is a 6.77 acre site bounded on the south by Sierra Vista Municipal Airport (SVMA) and extending northward approximately 100 yards, located in the southeast quarter of the northwest quarter of Section 20 and the northeast quarter of the southwest quarter of Section 20, Township 21 South, Range 20 East, Gila and Salt River Baseline and Meridian (see Attachment B 1-4).

The second alternative is a 10-acre site west of the future Taxiway "D" extension and approximately 400 feet northeast of Taxiway "K" (on U.S. Army property) for the construction and operation of the proposed facilities. All 10 acres of land could be disturbed during facility construction (see Attachment C 1-2).

The preferred alternative is the 6.77-acre site. The Fort Worth District, acting for INS, is also preparing an environmental assessment for this proposed action. As soon as the draft becomes available, you will be sent a copy for your immediate review and comment.

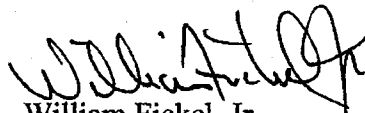
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If you require any additional information please contact Ms. Patience Patterson of my staff at (817) 886-1723, or by email at [patience.e.patterson@swf02.usace.army.mil](mailto:patience.e.patterson@swf02.usace.army.mil).

Sincerely,



William Fickel, Jr.  
Chief, Planning, Environmental  
and Regulatory Division

Enclosure

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Charles H. Parsons  
Regional Environmental Officer  
Immigration and Naturalization Service  
Administrative Center Laguna  
P.O. Box 30080 Laguna Niguel, CA 92607-0080



**DEPARTMENT OF THE ARMY**  
FORT WORTH DISTRICT, CORPS OF ENGINEERS  
P. O. BOX 17300  
FORT WORTH, TEXAS 76102-0300

REPLY TO  
ATTENTION OF:

August 19, 2002

Planning, Environmental and Regulatory Division

**SUBJECT:** Request for concurrence with No Effect Determination under National Historic Preservation Act of 1966 for Proposed Construction and Operation of US Border Patrol (USBP) Facility at the Sierra Vista Municipal Airport (SVMA), Sierra Vista, Arizona

Honorable Raymond Stanley, Chairman  
ATTN: Ms. Vernelda Grant  
San Carlos Apache Tribe  
P.O. Box 0  
San Carlos, AZ 85550

Dear Chairman Stanley:

In accordance with Section 106 of the National Historic Preservation Act and its implementing regulations, 36 CFR Part 800, The Fort Worth District of the US Army Corps of Engineers, acting on behalf of the Immigration and Naturalization Service (INS) and the US Border Patrol (USBP), wishes to continue to consult with the appropriate federally recognized Native American tribes who historically used this region or continue to use the area. We welcome your comments on this undertaking and look forward to hearing from you. Construction alternatives under analysis include two locations at SVMA (see Attachment A).

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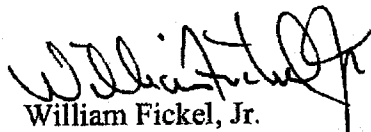
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If you require any additional information please contact Ms. Patience Patterson of my staff at (817) 886-1723, or by email at [patience.e.patterson@swf02.usace.army.mil](mailto:patience.e.patterson@swf02.usace.army.mil).

Sincerely,

  
William Fickel, Jr.  
Chief, Planning, Environmental  
and Regulatory Division

Enclosure

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Charles H. Parsons  
Regional Environmental Officer  
Immigration and Naturalization Service  
Administrative Center Laguna  
P.O. Box 30080 Laguna Niguel, CA 92607-0080



**DEPARTMENT OF THE ARMY**  
FORT WORTH DISTRICT, CORPS OF ENGINEERS  
P. O. BOX 17300  
FORT WORTH, TEXAS 76102-0300

REPLY TO  
ATTENTION OF:

August 19, 2002

Planning, Environmental and Regulatory Division

**SUBJECT:** Request for concurrence with No Effect Determination under National Historic Preservation Act of 1966 for Proposed Construction and Operation of US Border Patrol (USBP) Facility at the Sierra Vista Municipal Airport (SVMA), Sierra Vista, Arizona

Dr. John Welch  
Tribal Historic Preservation Officer  
White Mountain Apache Tribe  
P.O. Box 700  
Whiteriver, Arizona 85941

Dear Dr. Welch:

In accordance with Section 106 of the National Historic Preservation Act and its implementing regulations, 36 CFR Part 800, The Fort Worth District of the US Army Corps of Engineers, acting on behalf of the Immigration and Naturalization Service (INS) and the US Border Patrol (USBP), wishes to continue to consult with the appropriate federally recognized Native American tribes who historically used this region or continue to use the area. We welcome your comments on this undertaking and look forward to hearing from you. Construction alternatives under analysis include two locations at SVMA (see Attachment A).

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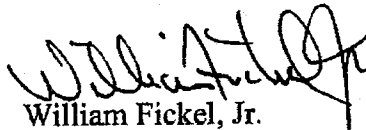
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If you require any additional information please contact Ms. Patience Patterson of my staff at (817) 886-1723, or by email at [patience.e.patterson@swf02.usace.army.mil](mailto:patience.e.patterson@swf02.usace.army.mil).

Sincerely,



William Fickel, Jr.  
Chief, Planning, Environmental  
and Regulatory Division

Enclosure

Copy furnished w/o enclosure

Charles H. Parsons  
Regional Environmental Officer  
Immigration and Naturalization Service  
Administrative Center Laguna  
P.O. Box 30080 Laguna Niguel, CA 92607-0080



**DEPARTMENT OF THE ARMY**  
FORT WORTH DISTRICT, CORPS OF ENGINEERS  
P. O. BOX 17300  
FORT WORTH, TEXAS 76102-0300

REPLY TO  
ATTENTION OF:

August 19, 2002

Planning, Environmental and Regulatory Division

SUBJECT: Request for concurrence with No Effect Determination under National Historic Preservation Act of 1966 for Proposed Construction and Operation of US Border Patrol (USBP) Facility at the Sierra Vista Municipal Airport (SVMA), Sierra Vista, Arizona

Honorable Wayne Taylor Jr., Chairman  
ATTN: Mr. Leigh J. Kuwanwisiwma and/or Mr. Terry Mogart  
Hopi Tribe  
P.O. Box 123  
Kykotsmovi, AZ 86039

Dear Chairman Taylor:

In accordance with Section 106 of the National Historic Preservation Act and its implementing regulations, 36 CFR Part 800, The Fort Worth District of the US Army Corps of Engineers, acting on behalf of the Immigration and Naturalization Service (INS) and the US Border Patrol (USBP), wishes to continue to consult with the appropriate federally recognized Native American tribes who historically used this region or continue to use the area. We welcome your comments on this undertaking and look forward to hearing from you. Construction alternatives under analysis include two locations at SVMA (see Attachment A).

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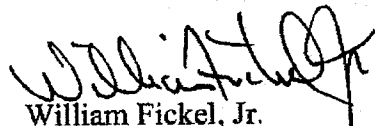
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If you require any additional information please contact Ms. Patience Patterson of my staff at (817) 886-1723, or by email at [patience.e.patterson@swf02.usace.army.mil](mailto:patience.e.patterson@swf02.usace.army.mil).

Sincerely,



William Fickel, Jr.  
Chief, Planning, Environmental  
and Regulatory Division

Enclosure

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Charles H. Parsons  
Regional Environmental Officer  
Immigration and Naturalization Service  
Administrative Center Laguna  
P.O. Box 30080 Laguna Niguel, CA 92607-0080



**DEPARTMENT OF THE ARMY**  
FORT WORTH DISTRICT, CORPS OF ENGINEERS  
P. O. BOX 17300  
FORT WORTH, TEXAS 76102-0300

REPLY TO  
ATTENTION OF:

August 19, 2002

Planning, Environmental and Regulatory Division

**SUBJECT:** Request for concurrence with No Effect Determination under National Historic Preservation Act of 1966 for Proposed Construction and Operation of US Border Patrol (USBP) Facility at the Sierra Vista Municipal Airport (SVMA), Sierra Vista, Arizona

Honorable Benito Valencia, Chairman  
Pascua Yaqui Tribe of Arizona  
7474 S. Camino De Oeste  
Tucson, AZ 85746

Dear Chairman Valencia:

In accordance with Section 106 of the National Historic Preservation Act and its implementing regulations, 36 CFR Part 800, The Fort Worth District of the US Army Corps of Engineers, acting on behalf of the Immigration and Naturalization Service (INS) and the US Border Patrol (USBP), wishes to continue to consult with the appropriate federally recognized Native American tribes who historically used this region or continue to use the area. We welcome your comments on this undertaking and look forward to hearing from you. Construction alternatives under analysis include two locations at SVMA (see Attachment A).

The first alternative is a 6.77 acre site bounded on the south by Sierra Vista Municipal Airport (SVMA) and extending northward approximately 100 yards, located in the southeast quarter of the northwest quarter of Section 20 and the northeast quarter of the southwest quarter of Section 20, Township 21 South, Range 20 East, Gila and Salt River Baseline and Meridian (see Attachment B 1-4).

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The preferred alternative is the 6.77-acre site. The Fort Worth District, acting for INS, is also preparing an environmental assessment for this proposed action. As soon as the draft becomes available, you will be sent a copy for your immediate review and comment.

-2-

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If you require any additional information please contact Ms. Patience Patterson of my staff at (817) 886-1723, or by email at [patience.e.patterson@swf02.usace.army.mil](mailto:patience.e.patterson@swf02.usace.army.mil).

Sincerely,



William Fickel, Jr.  
Chief, Planning, Environmental  
and Regulatory Division

Enclosure

Copy furnished w/o enclosure

Charles H. Parsons  
Regional Environmental Officer  
Immigration and Naturalization Service  
Administrative Center Laguna  
P.O. Box 30080 Laguna Niguel, CA 92607-0080



**DEPARTMENT OF THE ARMY**  
FORT WORTH DISTRICT, CORPS OF ENGINEERS  
P. O. BOX 17300  
FORT WORTH, TEXAS 76102-0300

REPLY TO  
ATTENTION OF:

August 19, 2002

Planning, Environmental and Regulatory Division

**SUBJECT:** Request for concurrence with No Effect Determination under National Historic Preservation Act of 1966 for Proposed Construction and Operation of US Border Patrol (USBP) Facility at the Sierra Vista Municipal Airport (SVMA), Sierra Vista, Arizona

Honorable Delia Carlyle, Chairperson  
ATTN: Mrs. Nancy Nelson  
Ak Chin Indian Community  
42507 W. Peters & Nall Road  
Maricopa, Arizona 85239

Dear Chairperson Carlyle:

In accordance with Section 106 of the National Historic Preservation Act and its implementing regulations, 36 CFR Part 800, The Fort Worth District of the US Army Corps of Engineers, acting on behalf of the Immigration and Naturalization Service (INS) and the US Border Patrol (USBP), wishes to continue to consult with the appropriate federally recognized Native American tribes who historically used this region or continue to use the area. We welcome your comments on this undertaking and look forward to hearing from you. Construction alternatives under analysis include two locations at SVMA (see Attachment A).

The first alternative is a 6.77 acre site bounded on the south by Sierra Vista Municipal Airport (SVMA) and extending northward approximately 100 yards, located in the southeast quarter of the northwest quarter of Section 20 and the northeast quarter of the southwest quarter of Section 20, Township 21 South, Range 20 East, Gila and Salt River Baseline and Meridian (see Attachment B 1-4).

The second alternative is a 10-acre site west of the future Taxiway "D" extension and approximately 400 feet northeast of Taxiway "K" (on U.S. Army property) for the construction and operation of the proposed facilities. All 10 acres of land could be disturbed during facility construction (see Attachment C 1-2).

The preferred alternative is the 6.77-acre site. The Fort Worth District, acting for INS, is also preparing an environmental assessment for this proposed action. As soon as the draft becomes available, you will be sent a copy for your immediate review and comment.

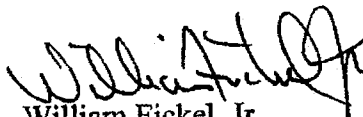
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If you require any additional information please contact Ms. Patience Patterson of my staff at (817) 886-1723, or by email at [patience.e.patterson@swf02.usace.army.mil](mailto:patience.e.patterson@swf02.usace.army.mil).

Sincerely,



William Fickel, Jr.  
Chief, Planning, Environmental  
and Regulatory Division

Enclosure

Copy furnished w/o enclosure

Charles H. Parsons  
Regional Environmental Officer  
Immigration and Naturalization Service  
Administrative Center Laguna  
P.O. Box 30080 Laguna Niguel, CA 92607-0080



**DEPARTMENT OF THE ARMY**  
FORT WORTH DISTRICT, CORPS OF ENGINEERS  
P. O. BOX 17300  
FORT WORTH, TEXAS 76102-0300

REPLY TO  
ATTENTION OF:

August 19, 2002

Planning, Environmental and Regulatory Division

SUBJECT: Request for concurrence with No Effect Determination under National Historic Preservation Act of 1966 for Proposed Construction and Operation of US Border Patrol (USBP) Facility at the Sierra Vista Municipal Airport (SVMA), Sierra Vista, Arizona

Honorable Donald Antone, Sr., Governor  
ATTN: Mr. Barnaby V. Lewis  
Gila River Indian Community  
P.O. Box 97  
Sacaton, AZ 85247

Dear Governor Antone:

In accordance with Section 106 of the National Historic Preservation Act and its implementing regulations, 36 CFR Part 800, The Fort Worth District of the US Army Corps of Engineers, acting on behalf of the Immigration and Naturalization Service (INS) and the US Border Patrol (USBP), wishes to continue to consult with the appropriate federally recognized Native American tribes who historically used this region or continue to use the area. We welcome your comments on this undertaking and look forward to hearing from you. Construction alternatives under analysis include two locations at SVMA (see Attachment A).

The first alternative is a 6.77 acre site bounded on the south by Sierra Vista Municipal Airport (SVMA) and extending northward approximately 100 yards, located in the southeast quarter of the northwest quarter of Section 20 and the northeast quarter of the southwest quarter of Section 20, Township 21 South, Range 20 East, Gila and Salt River Baseline and Meridian (see Attachment B 1-4).

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The preferred alternative is the 6.77-acre site. The Fort Worth District, acting for INS, is also preparing an environmental assessment for this proposed action. As soon as the draft becomes available, you will be sent a copy for your immediate review and comment.

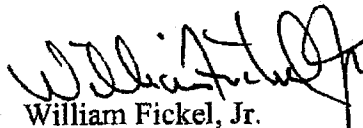
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If you require any additional information please contact Ms. Patience Patterson of my staff at (817) 886-1723, or by email at [patience.e.patterson@swf02.usace.army.mil](mailto:patience.e.patterson@swf02.usace.army.mil).

Sincerely,



William Fickel, Jr.  
Chief, Planning, Environmental  
and Regulatory Division

Enclosure

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Charles H. Parsons  
Regional Environmental Officer  
Immigration and Naturalization Service  
Administrative Center Laguna  
P.O. Box 30080 Laguna Niguel, CA 92607-0080



**DEPARTMENT OF THE ARMY**  
FORT WORTH DISTRICT, CORPS OF ENGINEERS  
P. O. BOX 17300  
FORT WORTH, TEXAS 76102-0300

REPLY TO  
ATTENTION OF:

August 19, 2002

Planning, Environmental and Regulatory Division

**SUBJECT:** Request for concurrence with No Effect Determination under National Historic Preservation Act of 1966 for Proposed Construction and Operation of US Border Patrol (USBP) Facility at the Sierra Vista Municipal Airport (SVMA), Sierra Vista, Arizona

Honorable Ivan Makil, President  
Salt River Pima-Maricopa Indian Community  
10005 E. Osborne Road  
Scottsdale, AZ 85256

Dear President Makil:

In accordance with Section 106 of the National Historic Preservation Act and its implementing regulations, 36 CFR Part 800, The Fort Worth District of the US Army Corps of Engineers, acting on behalf of the Immigration and Naturalization Service (INS) and the US Border Patrol (USBP), wishes to continue to consult with the appropriate federally recognized Native American tribes who historically used this region or continue to use the area. We welcome your comments on this undertaking and look forward to hearing from you. Construction alternatives under analysis include two locations at SVMA (see Attachment A).

The first alternative is a 6.77 acre site bounded on the south by Sierra Vista Municipal Airport (SVMA) and extending northward approximately 100 yards, located in the southeast quarter of the northwest quarter of Section 20 and the northeast quarter of the southwest quarter of Section 20, Township 21 South, Range 20 East, Gila and Salt River Baseline and Meridian (see Attachment B 1-4).

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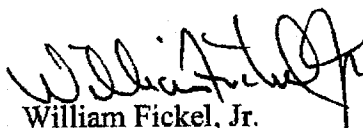
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If you require any additional information please contact Ms. Patience Patterson of my staff at (817) 886-1723, or by email at [patience.e.patterson@swf02.usace.army.mil](mailto:patience.e.patterson@swf02.usace.army.mil).

Sincerely,



William Fickel, Jr.  
Chief, Planning, Environmental  
and Regulatory Division

Enclosure

Copy furnished w/o enclosure

Charles H. Parsons  
Regional Environmental Officer  
Immigration and Naturalization Service  
Administrative Center Laguna  
P.O. Box 30080 Laguna Niguel, CA 92607-0080



**DEPARTMENT OF THE ARMY**  
FORT WORTH DISTRICT, CORPS OF ENGINEERS  
P. O. BOX 17300  
FORT WORTH, TEXAS 76102-0300

REPLY TO  
ATTENTION OF:

August 19, 2002

Planning, Environmental and Regulatory Division

**SUBJECT:** Request for concurrence with No Effect Determination under National Historic Preservation Act of 1966 for Proposed Construction and Operation of US Border Patrol (USBP) Facility at the Sierra Vista Municipal Airport (SVMA), Sierra Vista, Arizona

Honorable, Edward D. Manuel, Chairman  
ATTN: Mr. Peter Steere, Cultural Resources Manager  
Tohono O'odham Nation of Arizona  
P.O. Box 837  
Sells, AZ 85634

Dear Chairman Manuel:

In accordance with Section 106 of the National Historic Preservation Act and its implementing regulations, 36 CFR Part 800, The Fort Worth District of the US Army Corps of Engineers, acting on behalf of the Immigration and Naturalization Service (INS) and the US Border Patrol (USBP), wishes to continue to consult with the appropriate federally recognized Native American tribes who historically used this region or continue to use the area. We welcome your comments on this undertaking and look forward to hearing from you. Construction alternatives under analysis include two locations at SVMA (see Attachment A).

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Sincerely,



William Fickel, Jr.  
Chief, Planning, Environmental  
and Regulatory Division

Enclosure

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Charles H. Parsons  
Regional Environmental Officer  
Immigration and Naturalization Service  
Administrative Center Laguna  
P.O. Box 30080 Laguna Niguel, CA 92607-0080



**DEPARTMENT OF THE ARMY**  
FORT WORTH DISTRICT, CORPS OF ENGINEERS  
P. O. BOX 17300  
FORT WORTH, TEXAS 76102-0300

REPLY TO  
ATTENTION OF:

August 19, 2002

Planning, Environmental and Regulatory Division

**SUBJECT:** Request for concurrence with No Effect Determination under National Historic Preservation Act of 1966 for Proposed Construction and Operation of US Border Patrol (USBP) Facility at the Sierra Vista Municipal Airport (SVMA), Sierra Vista, Arizona

Mr. Malcolm B. Bowekaty, Governor  
Mr. Jonathan Damp, Zuni Heritage and Preservation  
Zuni Pueblo  
P.O. Box 339  
Zuni, NM 87327

Dear Governor Bowekaty:

In accordance with Section 106 of the National Historic Preservation Act and its implementing regulations, 36 CFR Part 800, The Fort Worth District of the US Army Corps of Engineers, acting on behalf of the Immigration and Naturalization Service (INS) and the US Border Patrol (USBP), wishes to continue to consult with the appropriate federally recognized Native American tribes who historically used this region or continue to use the area. We welcome your comments on this undertaking and look forward to hearing from you. Construction alternatives under analysis include two locations at SVMA (see Attachment A).

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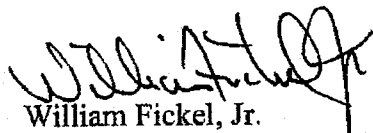
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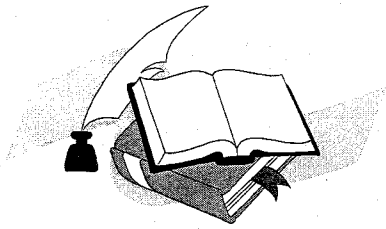
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Charles H. Parsons  
Regional Environmental Officer  
Immigration and Naturalization Service  
Administrative Center Laguna  
P.O. Box 30080 Laguna Niguel, CA 92607-0080

## APPENDIX C

### REGULATORY DATABASE SEARCH RESULTS

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# ALL LANDS

14947 W. Piccadilly Road, Goodyear, AZ 85338  
(623) 535-7800 Fax (623) 535-7900

## REGULATORY DATABASE (ASTM) SEARCH

YOUR FILE NO:

ALLANDS FILE NO: 2002-0663D

DATE: July 14, 2002

ALL LANDS hereby reports the search results of Federal and State Databases according to ASTM standards for Phase I Environmental Site Assessments E 1527-00. This is a confidential, privileged and protected document for the use of Vernadero Consulting. All Lands is not responsible for errors in the available records. The total liability is limited to the fee paid for this report.

1. The land referred to in this report is located in Cochise County, Arizona, described as follows:

Property described as the Sierra Vista Municipal Airport, Sierra Vista, Arizona, being in portions of Sections 18 , 19, 20, 21, 28, 29 & 30, all in Township 21 South, Range 20 East, Gila and Salt River Base and Meridian.

## SUMMARY

### FEDERAL & STATE ENVIRONMENTAL RECORDS

RECORDS (miles)	<=0.125	0.125 - 0.25	0.25 - 0.5	0.5 - 1.0
NPL	1	0	0	0
WQARF	0	0	0	0
RCRA COMPLIANCE	1	0	0	0
RCRA CORRACTS TSD	1	0	0	0
RCRA TSD FACILITIES	1	0	0	-
LANDFILLS	0	0	0	-
CERCLIS / NFRAP	1	0	0	-
AZ SUPERFUND	1	0	0	-
LUST	1	0	0	-
RCRA GENERATORS	1	-	-	-
UST	3	-	-	-
ERNS	0	-	-	-
HAZ. MAT. INCIDENTS	0	-	-	-

### OTHER ENVIRONMENTAL RECORDS

RECORDS (miles)	<=0.125	0.125 - 0.25	0.25 - 0.5	0.5 - 1.0
SARA	1	-	-	-
Dry well	0	-	-	-
Environmental Permits	0	-	-	-
RADON	see text			
FIRE INSURANCE	see text			
TOPOGRAPHIC DATA	see text			
ADWR Well Report	see text			

### DEFINITIONS:

ADEQ	Arizona Department of Environmental Quality
ADWR	Arizona Department of Water Resources
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CERCLIS	Federal CERCLA List
CORRACTS	TSD Facilities subject to Corrective Action under RCRA
EPA	US Environmental Protection Agency, Region IX
ERNS	Emergency Response Notification System
LUST	Leaking Underground Storage Tank
NFRAP	CERCLA Site which has no further remedial action planned
NPL	National Priority List (Superfund)
RADIUS	by definition includes subject property measured from exterior boundaries
RBCA	Risk Base Corrective Action
RCRA	Resource Conservation and Recovery Act
SARA	Superfund Amendment and Reauthorization Act
TSD	Treatment, Storage, Disposal Facility
UST	Underground Storage Tank
WQARF	Water Quality Assurance Revolving Fund

## **SUPERFUND NATIONAL PRIORITIES LIST (NPL)**

Under Section 105 of the Comprehensive Environmental Response, Compensation and Liability Act the Environmental Protection Agency established a National Priorities List (NPL) of Superfund sites. Inclusion on the NPL reflects a significant risk to public health and the environment and indicates a Federal Priority to remediate the site. This database is provided by the Arizona Department of Environmental Quality, dated March, 2002, and searched to identify all NPL sites within a 1.0 mile search radius of subject property.

### **Property is located within the Fort Huachuca NPL Site:**

**Boundaries:** The site is located in Sierra Vista, in southeastern Arizona.

**Contaminants:** The areas of interest, as a result of two consent decrees with ADEQ involve four hazardous waste sites (Consent Order D-10-91) and 18 underground storage tank or leaking underground storage tank sites (Consent Order L-58-96). Of the twenty sites considered to be solid waste sites from the original Consent Order (C-10-91), eleven sites remained active until recently. At the end of November 2000, ADEQ approved a decision document which closed out six sites, leaving only five sites active. Contaminants of concern at the site may change as new data become available.

**Public Health Impact:** There are no known health risks from this site.

**Community Involvement Activities:** No community involvement activities are planned at this time.

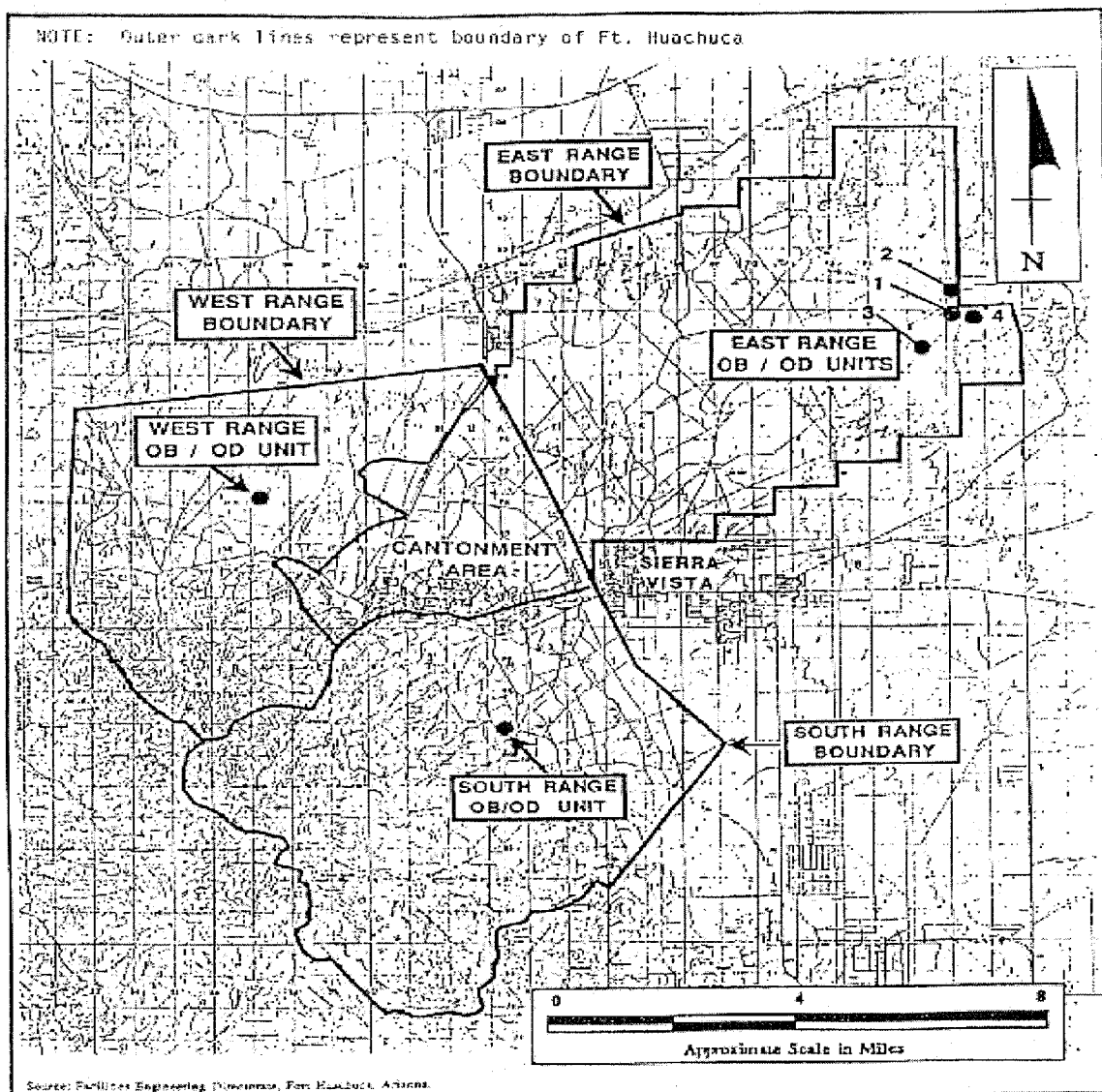
**Site Status:** Fort Huachuca has been in continuous operation since its establishment in 1877. During late 2001, Fort Hauchuca remediated all hydrocarbon contaminated soils at the Libby Army Airfield to levels below residential soil remediation levels (SRLs). In January 2002, Fort Hauchuca sent a report to ADEQ for concurrence on the remediation at the Libby Army Airfield. This was followed by a decision document to close out four additional sites (including the Libby Army Airfield). ADEQ has signed the decision document memorializing the closeout of the four sites.

**Information Repository:** Interested parties can review site information at the ADEQ main office located at 3033 N. Central Avenue, Phoenix. Site information is available for review Monday through Friday from 8 a.m. to 5 p.m. Please contact the Superfund Programs Section file coordinator at (602) 207-4420, or (800) 234-5677, Ext. 4420 (Arizona toll free) to arrange a file review appointment.

**Contacts:** For further information about this site, please call the ADEQ Federal Projects Unit Manager, Moses Olade, at (602) 207-4245. In Arizona, but outside the Phoenix area, call (800) 234-5677, Ext. 4245.

**SUPERFUND NATIONAL PRIORITIES LIST  
(cont.)**

**Fort Huachuca NPL Site (cont.):**



**FORT HUACHUCA, ARIZONA**

## **WATER QUALITY ASSURANCE REVOLVING FUND (WQARF)**

The state of Arizona established a remedial program under A.R.S. 49-282 to facilitate the conservation and clean-up of Arizona drinking water and water sources. Under the authority of the WQARF program, the state actively identifies any actual or potential impact upon state waters, evaluates the extent of contamination, identifies parties responsible, and provides money grants to assist in clean-up activities. This database is provided by the Arizona Department of Environmental Quality dated March 2002, and searched to identify all WQARF sites within a 1.0 mile search radius of subject property.

No WQARF Registry List sites were found located within a 1.0 mile search radius of subject property.

## RESOURCE CONSERVATION AND RECOVERY ACT (RCRA) COMPLIANCE FACILITIES

The RCRA Compliance Log lists facilities that have been or presently are under investigation for non-compliance with RCRA regulations. Inclusion of any facility on this list indicates a history of compliance problems and RCRA regulatory violation. This database is from the Arizona Department of Environmental Quality RCRA Compliance Log, dated January, 2002, and searched for compliance facilities within a 1.0 mile search radius of subject property.

ID	EPA ID	FACILITY	ADDRESS	DISTANCE/ DIRECTION
1710; 2127; 2224; & 2270	AZ0210020434	USAG / Ft Huachuca	Ft. Huachuca	Site located within boundaries

## CORRACTS TSD FACILITIES

Under RCRA the Environmental Protection Agency compiles a database of facilities that are involved in the transportation, treatment, storage, or disposal of hazardous materials. This database is from the Arizona Department of Environmental Quality RCRA Log dated January, 2002, and checked for Federal RCRA CORRACTS TSD Facilities which occurred within a 1.0 mile search radius of subject property.

EPA ID	FACILITY	ADDRESS	DISTANCE/ DIRECTION
AZ0210020434	USAG / Fort Huachuca	A T Z S E H B	Site located within boundaries

## TSD FACILITIES

Under RCRA the Environmental Protection Agency compiles a database of facilities that are involved in the transportation, treatment, storage, or disposal of hazardous materials. Inclusion on the TSD Facilities list does not exclude being on the CORRACTS Facility List. This database is from the Arizona Department of Environmental Quality RCRA TSD Facilities, dated January, 2002, and checked for Federal TSD Facilities which occurred within a 0.5 mile search radius of subject property.

EPA ID	FACILITY	ADDRESS	STATUS	DISTANCE/ DIRECTION
AZO210020434	Usarmy Garrison - Ft. Huachuca	Ft. Huachuca	S	Site located within boundaries

### TSD TYPE(S):

L = LAND DISPOSAL

I = INCINERATION

B = BOILERS AND INDUSTRIAL FURNACES

S = STORAGE AND TREATMENT

## LANDFILLS

The state of Arizona maintains listings of closed and permitted, operating landfills and solid waste dump sites. Lists of closed facilities are not necessarily complete - older dumping areas may not be documented. This database is from the Arizona Department of Environmental Quality Waste Programs Division; Solid Waste Section Directory of Arizona Active and Inactive Landfills dated May, 1999, and checked for active and inactive landfills located within a 0.5 mile search radius of subject property.

No active nor inactive landfills were found located within a 0.5 mile search radius of subject site.

### Codes:

CSWLF: Closed Solid Waste Landfills

CSWOD: Closed Solid Waste Dumps

## FEDERAL CERCLIS / NFRAP LIST

The CERCLIS list contains sites which are either proposed to or on the NPL and sites which are in the screening and assessment phase for possible inclusion on the NPL. Those sites on the NFRAP list have no further remediation action planned. This database is provided by EPA dated January, 2002, and searched for facilities within a 0.5 mile search radius of subject property.

EPA ID	NFRAP	FACILITY	ADDRESS	DISTANCE/ DIRECTION
AZ0210020434		Fort Huachuca	Fort Huachuca	Site located within boundaries

## ARIZONA SUPERFUND PROGRAM LIST

The Arizona Superfund Program List replaces the Arizona CERCLIS Information Data System (ACIDS). This list is more representative of the sites and potential sites within jurisdiction of the Arizona Department of Environmental Quality Superfund Programs Section (SPS). This database is provided by the Arizona Department of Environmental Quality, dated October, 2000, and searched to identify all sites within a 0.5 mile search radius of subject property.

SITE	PROGRAM	PROGRAM STATUS	PROGRAM DATE	DISTANCE/ DIRECTION
FORT HUACHUCA	DOD	ACTIVE	10/1/1991	Site located within boundaries

### Program Status codes:

Pending PI	WQARF Preliminary Investigation (PI) is scheduled or in process
NFLA	PI has resulted in a no further investigation or action determination
On Registry	PI has resulted in inclusion of a site on the WQARF Registry
Referred	case has been transferred to another ADEQ program
ACTIVE	The Department of Defense is presently addressing the site
On NPL	site has been listed on the CERCLA National Priorities List

# **REGISTERED LEAKING UNDERGROUND STORAGE TANKS (LUST)**

Owners of USTs are required to report to the Arizona Department of Environmental Quality any and all releases of tank contents for which ADEQ maintains an ongoing file documenting the nature of contamination and the status of each such incident. This database is from the ADEQ LUST Log dated February, 2002, and searched for LUST sites located within a 0.5 mile search radius of subject property.

ID	LUST ID NO	FACILITY	ADDRESS	DATE OPEN	DATE CLOSED	P CODE	DIST./ DIREC.
0-005378	1186.01	Bldg 87836	Brainard Rd & Arizona St	3/30/1990	2/7/1994	7	SITE
	2682.01	Libby Army Air		2/12/1993	2/8/1995	7	
	2709.01	Field		3/5/1993	5/6/1996	7	
	3728.01			9/22/1994	5/8/1996	7	

P CODE (Leaking UST Priority):

7	LUST case close-out involving combination with other LUST number/case at the same facility
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## RESOURCE CONSERVATION AND RECOVERY ACT FACILITIES (RCRA)

Under RCRA the Environmental Protection Agency compiles a database of facilities that are involved in the generation of hazardous materials. This database is from the Arizona Department of Environmental Quality Alternative RCRA Information for States (ARIS) Notification List, dated January, 2002, and checked for facilities located within a  $\leq 0.125$  mile search radius of subject property.

EPA ID	FACILITY	ADDRESS	NOTIF. DATE	STATUS
AZ0210020434	USAG / Fort Huachuca	A T Z S E H B	6/4/1993	LQG / TRN

### CODES:

LQG: Large quantity generator (more than 1000 kg per month)  
SQG: Small quantity generator (100 – 1000 kg per month)  
CEG: Conditionally exempt small quantity generator (less than 100 kg per month)  
OIL : Used oil activity  
DAG: Deactivated generator  
TRN: Transporter of hazardous waste  
DAT: Deactivated transporter of hazardous waste  
BBL: Burner / Blender

# REGISTERED UNDERGROUND STORAGE TANKS (UST)

State (A.R.S. 49-1001 to 1014) and Federal (RCRA Subtitle I) laws require that persons who own or have owned underground storage tanks containing "regulated substances" complete a notification form and register the tank with the state. This database is from the Arizona Department of Environmental Quality UST Log dated February, 2002, and searched for UST sites located within a  $\leq 0.125$  mile search radius of subject property.

ID	FACILITY	ADDRESS
0-004514	Sierra Vista Muni Airport	2500 Aviation Blvd
0-007606	Bldg 91249 Control Tower Libby A	Libby Army Air Field
0-005378 **	Bldg 87836 Libby Army Air Field	Brainard Rd & Arizona St

\*\* no information available

## DETAILS

Facility Id	Facility		Owner Id	Owner	
Tank No.	Status	Content	Capacity	Age	Tank Material
Tank Release Detection		Pipe Material	Piping Type		Pipe Release Detection

0-004514	<b>Sierra Vista Muni Airport</b>		918	City Of Sierra Vista	
	2500 Aviation Blvd ,Sierra Vista AZ 85635			<85635>	
1	REMV Gasoline	10000			Unknown
2	REMV Gasoline	2500			Unknown
3	REMV Gasoline	25000			Unknown
4	REMV Gasoline	25000			Unknown
5	REMV Gasoline	2500			Unknown

0-007606	<b>Bldg 91249 Control Tower Libby A</b>		991	USAG Fort Huachuca	
	Libby Army Air Field ,Fort Huachuca AZ 85613-6000			<85613-6000>	
1	ACTV Diesel	1000		Unknown	Suction: Check

## **FEDERAL EMERGENCY RESPONSE NOTIFICATION SYSTEM (ERNS) LIST**

The ERNS list is a national database used to collect information on reported releases of oil and hazardous substances. This database is provided by EPA through the Right of Know Net by OMB Watch and Unison Institute from 1983 to February, 2002, and checked for incidents located within a  $\leq 0.125$  mile search radius of subject property.

No incidents were found located within a  $\leq 0.125$  mile search radius of subject property.

## **HAZARDOUS MATERIAL INCIDENTS**

The Arizona Department of Environmental Quality (ADEQ) Response Team documents spills and incidents involving hazardous materials that are reported to the unit. This database is from the Arizona Department of Environmental Quality Emergency Response Log from 1984 through June, 2001, and checked for hazardous material incidents located within a  $\leq 0.125$  mile search radius of subject property.

No hazardous material incidents were found located within a  $\leq 0.125$  mile search radius of subject property.

## OTHER ENVIRONMENTAL RECORDS

### **SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT (SARA) TITLE III EXTREMELY HAZARDOUS SUBSTANCES SITES**

Under the Community Right-To-Know portion of SARA, facilities which must prepare, or have available, material safety data sheets (MSDS) and must submit either copies of the MSDS or a list of the chemicals to the State Emergency Response Commission. This Database is from the SARA Title III List dated February, 2002, and searched to identify all SARA sites within a  $\leq 0.125$  mile search radius of subject property.

EPA ID	FACILITY	ADDRESS	DISTANCE/ DIRECTION
AZ0210020434	USAG / Fort Huachuca	A T Z S E H B	Site located within boundaries

### **ADEQ DRY WELL REGISTRATION DATA BASE**

Dry wells are constructed for the purpose of collecting storm waters. Dry wells are required to be registered with ADEQ. This database is from the ADEQ dry well registration database dated February, 2002, and searched for dry wells located within a  $\leq 0.125$  mile search radius of subject property.

FACILITY	ADDRESS	BEG REG #	END REG #	TOTAL WELLS

No registered dry wells were found located within a  $\leq 0.125$  mile search radius of subject property.

## ARIZONA RADIATION REGULATORY AGENCY HOME RADON SURVEY

The Arizona Radiation Regulatory Agency, in cooperation with the EPA, initiated a program to measure radon concentrations with the primary goal of determining the statewide distribution of radon and identify areas of potentially high concentrations. This database is from the ARRA Home Radon Survey revised June 16, 1993, for the subject property zipcode.

ZIPCODE	HIGH VALUE in picoCuries/liter	NO. OF TESTS	TESTS <4.0 pCi/L	TESTS at 4.0+ pCi/L
85613	Not available			

## ENVIRONMENTAL PERMITS

These lists include Groundwater Permits, Reuse Permits; National Pollutant Discharge Elimination System (NPDES) Permitted Facilities and Aquifer Protection Permits. Any facility which discharges a material that directly or indirectly adds any pollutant to the waters of the state may be required to obtain a permit as required by the Aquifer Protection Permit Rules. These databases are from the Arizona Department of Environmental Quality and the Environmental Protection Agency and updated to May, 2001, and checked for inclusion of subject property.

Subject property was not found on these lists.

## **FIRE INSURANCE MAPS**

A review was made at the Arizona State Capital Archives for Fire Insurance Maps, more commonly known as Sanborn Maps, which covered the area in which the subject property is located. Subject property is not located within the boundaries of available maps.

## **USGS 7.5 MINUTE TOPOGRAPHICAL MAPS**

The United States Geological Survey Topographic maps are derived from Terrain Navigator Software from Maptech, Inc. ([www.maptech.com](http://www.maptech.com)) and are for informational purposes only.

<b>MAP NAME</b>	<b>YEAR ISSUED</b>	<b>REVISED / INSPECTED DATE</b>
Fort Huachuca, AZ	1958	1983

## ARIZONA DEPARTMENT OF WATER RESOURCES WELL REPORT

This database is from the Arizona Department of Water Resources Well Report Operations Division Report, dated August, 2001. This report identifies existing wells sequenced by legal description and checked for inclusion of subject site and adjacent properties within 10 Acres.

### Water Uses (WU)

A Irrigation  
B Utility (Water Co.)  
C Commercial  
D Domestic  
E Municipal  
F Industrial  
G Recreational  
H Subdivision  
I Mining  
J Stock  
K Other - Exploration  
L Drainage  
M Monitoring  
N None  
O Other - Non-Production  
R Recharge  
T Test  
V dewatering

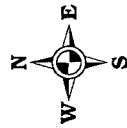
### Legal Description

T Township  
N/S North or South  
R Range  
E/W East or West  
S Section  
Q1 Quarter of Section (160 Acres)  
Q2 Quarter Quarter of Section (40 Acres)  
Q3 Quarter Quarter Quarter of Section (10 acres)  
ID Well Registration Number  
WD Well Depth  
WL Water Level  
DIA Casing width

ID	T	N/S	R	E/W	S	Q1	Q2	Q3	WU	WD	WL	DIA	NAME
505189	21	S	20	E	20	NE	SE	SW	D	805	427	12	Sierra Vista, City,
562352	21	S	20	E	20	NW	SE	NE	D	810	443	24	Sierra Vista, City,
579094	21	S	20	E	21				N	250	0	7	Environmental And Natural
579135	21	S	20	E	21	NE	SE	NW	N	376	350	7	Environmental And Natural
580124	21	S	20	E	21	NE	SW	NE	T	0	0	0	Environmental And Natural
580126	21	S	20	E	21	NE	SW	NE	T	0	0	0	Environmental And Natural
579136	21	S	20	E	21	SE	NE	NW	N	250	0	1	Environmental And Natural
547932	21	S	20	E	21	SE	NW	NW	M	480	396	10	Dept Of Army,
579137	21	S	20	E	21	SE	NW	SE	N	100	0	7	Environmental And Natural
547933	21	S	20	E	21	SE	NW	SE	M	0	0	0	Dept Of Army,
579138	21	S	20	E	21	SE	SE	SW		100	0	7	Environmental And Natural
580123	21	S	20	E	21	SE	SW	NE	T	0	0	0	Environmental And Natural

**ARIZONA DEPARTMENT OF WATER RESOURCES**  
**WELL REPORT (cont.)**

ID	T	N/S	R	E/W	S	Q1	Q2	Q3	WU	WD	WL	DIA	NAME
579093	21	S	20	E	28				N	100	0	7	Environmental And Natural
547931	21	S	20	E	28	NE	NE	SE	M	452	352	5	Dept Of Army,
579139	21	S	20	E	28	NE	NE	SW	T	250	0	1	Environmental And Natural
579140	21	S	20	E	28	NE	SW	NE	N	100	0	7	Environmental And Natural
626108	21	S	20	E	28	SW	NE	SW	D	800	486	18	Us Army Ft Huachuca,
539500	21	S	20	E	30	NE			N	0	0	0	Commander, USAG,



# **LEGEND**

◆ USTs    ● CERCLA / NFRAP    ● SARA    ⊙ LANDFILLS

■ RCRA    ▼ LUSTs    ▲ RCRA COMPLIANCE

☆ SITE (Generators, TSD & CORRACTS TSD)    SCHOOL    \* MULTIPLE FACILITIES

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